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EVOLUTION AS REVELATION

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November 1962

FOREWORD

The series of lectures upon which these chapters are founded was begun February of 1959. That year marked the centenary of Darwin's great work, "The Origin of Species." Since its appearance, the theory of evolution with certain variations and deviations has become more than a tentative hypothesis. It has been accepted as having so high a degree of probability that its truth is generally assumed in all scientific speculation concerning man's origin and the development of human society.

Darwin did more than establish a theory or write a book. He ushered in an era. In an address delivered at the annual banquet of the Economic Club at the Hotel Astor on May 23, 1912, Woodrow Wilson said, "After the Newtonian Theory had been developed, almost all thinking tended to express itself according to the analogies of the Newtonian Theory, and since the Darwinian Theory has reigned among us everybody tries to express what he wishes to expound in terms of development and accommodation to environment."[1]

Had Wilson lived to deliver his address a quarter of a century later, the risen sun of Einstein and the other luminaries of modern physics would already have bathed the physical universe in new and weird splendor, sending not only scientists on strange adventures of exploration, but furnishing the language of intelligent discourse with a whole new arsenal of analogies and metaphors borrowed from the Theory of Relativity, the Minkowski Manifold, the Principle of Indeterminism and the anxieties born of the atomic bomb. These now add themselves to the vocabulary derived from Newton and Darwin.

It is in this semantic atmosphere that the centenary of Darwin's great work and the cosmic process which bears his name calls for re-evaluation not alone by scientists, but by philosophers and theologians as well.

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[1] *Public Papers of Woodrow Wilson*, Vol. 1, edited by Ray Stanard Baker and William E. Dodd (New York: Harper and Brothers, 1925).

Herbert Spencer, through his "Synthetic Philosophy," first made the ideas and the terminology of evolutionary theory widely known even in non-scientific circles, especially since he applied it to realms other than biological. Its categories help to define psychology, sociology, education and other areas of human endeavor. Today no one thinks it at all strange to read an article on "The Development of Advertising in the United States" or the "Evolution of the Cosmetic Industry" or on the "Relation of Sexual Selection to the Pigmentation of Tribes Along the Congo." We are not even astonished to hear the remark tossed off at a cocktail party that "so-and-so at the start was a very good fellow, but he failed to react properly to his environment."

It was at first a blow to clerical literalists that the six days of creation, so beautifully described in Genesis should have been stretched to cover epoch upon epoch of unrecorded time, without any definitely authenticated beginning, and that man instead of having been neatly fashioned, as a special creation in the image of God, came forth out of the womb of primal life, a special variant and mutation of the ape family.

The days of the Scopes trial are long past and we hope forever gone. I know not one educated representative of any of the great religions of mankind who today would stigmatize a belief in evolution as heresy. There are always, of course, some fundamentalists clinging to the frayed fringes of religious thought who might prove the exception. There were many at first who sought to reinterpret the glorious hymn of creation with which the Bible begins, by ascribing hidden meanings to the days and acts of creation, and who thus transformed a magnificent poetic legend, infused with high religious significance, into a dull, uninspired allegory spelling out an inaccurate and unsatisfactory account of a complex scientific theory. These, too, are fast vanishing from the scene.

The enthusiasm with which Henri Bergson's great book was greeted by the more religious thinkers, especially in America, is briefly, but significantly indicated in Irwin Edman's foreword to the Modern Library Edition of *Creative Evolution*. James and others hailed Bergson with ecstatic enthusiasm. Process and growth were identified with Creation, and Creation or creativity with freedom. The word "Elan Vital" could be conjured with and its powers were freely invoked.

Whatever may have been the weaknesses of this new cosmic vitalism, it helped, together with Heisenberg's principle of Indeterminism in physics, to crack the hard surface of fatalistic mechanism. There were evidently phenomena within nature which allowed for the emergence of novelty and the reality of some area of unpredictability, however limited.

Modern thinkers like Henry Nelson Wieman and others are therefore inclined to identify God with the evolutionary process, insofar, at least, as this points in the direction of man's further humanization and self-fulfillment.

This, I hold to be unwarranted. God, we shall try to show, is Being, not Process. If we equate the cosmic process with God, it would be the process of the becoming of God, as the growth of a tree is the process of the becoming of a tree. So the evolution of life is not itself Life but the successive changes of the physical universe through which Life comes to be, to develop and to survive.

I believe the true state of modern thought is best expressed in the following lines: "It must be admitted that contemporary science seems prima facie to imply the ultimate inclusion of all becoming within being. The simple way to interpret relativity physics is in terms of the Minkowski Manifold of events in space-time taken as a *complete totality covering all time as well as all space.*"[2] This *complete totality* is that which eventually we shall attempt to define as God. Process must find its meaning within the framework of Being. If anything is to become, we must first search for something that is.

As God is not a process, so creation cannot be a process. It is not in time; only processes are in time. For a process is always a sequence of events, each stage of which at any instant is necessarily determined by the events (entities and their environment) which precede it, and in turn determine and shape the events which follow from it. At no time is every stage of the cosmic process nonexistent. Matter in motion alone measures time and allows for sequence.

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[2] Charles Hartshorne and William L. Reese, *Philosophers Speak of God* (Chicago: University of Chicago Press, 1953).

Creation is that by which any possibility is made actual. If the evolutionary process as such has actual existence, it is something created. The structure and form of the process, we are aware, does enter into existence. Creation has no date because it is not in time, or rather because it is in all time and in all space and therefore in all causality. The created constitutes the whole field of existence. The Creator transcends mere existence and involves the realm of eternal possibility as well as of actuality. Every process must be possible in a sense logically prior to its actuality.

The cosmic process, however, or nature, is the only source of man's knowledge and *can be said to be creative in the sense that it reveals God's creativity*—gives us some glimpse of its scope and its meaning, as it does certain other of His necessary attributes.

This is the purpose of these chapters. An attempt to show how the evolution of life reveals, in the human perspective, the nature of God. He is its unchanging source, but all change insofar as it has structure and direction and is therefore process and not chaos, is of His creation. Change becomes the means by which the Being of God communicates with the mind and understanding of the creature man.

Some of the more abstract metaphysical arguments defining God as the Whole of Being are already found in the writer's previous volume, *The Moral Life of Man, Its Philosophical Foundations.*[3] In the chapters which follow much new material has been drawn upon, and it is hoped that new insights will be found to illumine the subject matter.

The sections dealing with Process and with God point in a new direction. They seek to relate Being not chiefly to the problems of ethics, but to the inner nature of the evolutionary process, and the religious mood and need of modern man.

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[3] Jacob Kohn, *The Moral Life of Man, Its Philosophical Foundations* (New York: Philosophical Library, 1956).

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EVOLUTION AS REVELATION

PART I—BEING

Chapter I

DEFINITION OF REALITY

The Rational and Historical Order

No matter what were the psychological or historical processes through which the idea of the one God as found in the Biblical tradition came into being and was brought to maturity, it inevitably led to the conclusion that as He is one, so must the world be one. All things were related to one another, at least as fellow creatures. They all were thought to owe their existence to His will, His word, His wisdom. They each had their place in one divine purpose and design.

Historical and psychological processes, however, cannot dictate the rational order which philosophy employs. Religious philosophy aims to prove not so much that God exists, as that faith in God is a rational assumption. It seeks to demonstrate that the idea of God must be true because human experience in and of the world in which we live and hope and strive and suffer logically demands this assumption to make reality not only endurable but understandable.

If we are possessed of faith, we will examine the cosmos for facts with which to confirm that faith. If we lack faith but have open minds, we will examine and analyze the same facts to find out if, in our rejection of faith, we have not also rejected reason.

The latter, that is, reason, cannot make the leap which religious enthusiasm often does, from faith in God to the assertion that nature and history must be in harmony with that faith. A strong religious conviction is only a thought held with emotional intensity or apprehended with intuitive immediacy so that the subject of the experience cannot or need not for the moment submit it to analysis. The sense of immediacy is precisely a state which can never be recaptured at will once it has been dissipated. It can only be reconstructed in thought or imagination.

No experience involving a judgment validates itself. If there are experiences which require no validation, as some might interpose, then the question—"was the judgment involved therein true or false"—will never arise and speculation is ruled out from the beginning. I am not speaking only of religious experiences. If a man whose integrity is beyond question says, "yesterday, I saw flying saucers," every meteorologist and unnumbered specialists in other fields will immediately ask, "Was it flying saucers he really saw?" That he had an immediate experience such as he describes, no one will doubt, but the judgment emerging therefrom, "I saw flying saucers," will still be open to question.

Similarly, the affirmation, "God is real because I have communed with Him" requires further demonstration if it is to be accepted as true or rational or even plausible.

Universe or Multiverse

Perhaps some of the above statements beg the question. The idea of a universal God assumes not only that there is a God but that there is a universe. The term universe implies that all things, despite their heterogeneous multiplicity, ultimately and in some way constitute one whole. Let us then put it this way—can we reach some logical decision as to whether Being or Reality or Nature, call it what you will for the present, is universe or multiverse. (I prefer the term Reality or Being rather than *Existence* for reasons which will become clearer later on.)

It is possible to toy with the idea that there are two or more totally unrelated realms of reality. Then, of course, there are no propositions which can be advanced as common to them all, upon which we could posit or from which we could deduce the existence of one God. If each of these totally unrelated worlds had one God unrelated to any other god, each would be some sort of tutelary spirit. He would be neither the "One and Unique" as he is termed in post-biblical Jewish literature, nor "Life of all Worlds" as the liturgy sometimes describes the One in a mood of more or less philosophical mysticism. Nor could He even be a member of a pantheon for these gods of the heathen pantheon together helped weave the tapestry of human destiny and were called upon by the same man in the depth of his need for aid in love or war or famine or disaster. It was only because life and the world, if not strictly one, was yet thought to consist of related realms and compartments that the Greek gods could find their place in one pantheon. I end this paragraph as I began it. We can *toy* with the idea that there is a realm of being unrelated to other beings or other phases of Being. It is all, however, a mere *toying* with words. We can neither conceive nor imagine, much less describe, such unrelatedness. Nothing has ever or will ever be defined by the mind of man save in relation to something else. Everything, we shall see, is relevant to some other in some perspective of experience, actual or possible.

Obviously, if something is related to me or to my knowledge, it must have some relation to all other items that enter into my experience. Even that which is unknown is simply that part of the one world which I do not or cannot know, of which I can say nothing but to which I can nevertheless point. It lies, then, beyond the frontiers of knowledge; it relates to me as the *limit* to my knowledge and the *challenge* to my ignorance.

Let us make one other attempt at illustration. Suppose (A) is some fact which I have encountered, or an object known to me, and (B) something equally real but wholly unrelated to (A) so that I cannot possibly make any statement about (A) which implies any truth concerning (B) or is implied by some characteristic of (B). We take for granted, however, that they are both real. It would then be safe to say that they form a group of two "*reals*" and, therefore, constitute half of a group of four realities and that neither can escape the whole skein of mathematical relationships which apply to all beings whether actually existent or only possible or ideal or imaginary.

Mathematics and formal logic are free of all subjugation to the merely existent. Two fairies and two fairies make four as truly as do two books and two books. Logic and mathematics define being in its utmost generality. One and one will always constitute a set of two and they cannot possibly make three. Mathematics permits us to declare that a triad of two is self-contradictory and hence unreal. It gives us no reason whatever to suppose that a triad of three is real in the context of objects related to us, but a triad of two may affirm something about a world unrelated to us because here we are right back to the logical contradictions we sought to avoid. We have assumed that (B) may be real but unrelated. If so, there are *two realms of reality* and (B) must abdicate the independence of its unrelatedness, in order, at least, to become a member of a *set of real beings* and accept the obligation of citizenship under a logical and mathematical constitution.

That reality, with all its interrelated phases of essence, entity and process, of quality and value, subject and object, constitutes a whole, is the necessary formal presupposition of a monotheistic philosophy. Since there is one universe, there may be one God whose universe this is. In *Logic and Scientific Method* (Cohen and Nagel), I come across the statement which, to some extent I believe, confirms our position. "This may be stated in the paradoxical fashion that a false proposition implies any proposition and that any proposition implies a true one," and in conclusion we have the following, "This, however, also involves a question of metaphysics; to wit, whether all truths are necessarily connected in the ultimate nature of things." [4] I see no way of escaping this necessity.

Again, we must emphasize that religion or religious faith is not dependent upon such a proposition and upon conscious deductions therefrom. The existentialists would all insist that religion is an experience in which God confronts man and man confronts God, that it is independent of conceptual speculative thought. They may or may not be right. But *a philosophy of religion* attempts to determine whether such an experience is hallucination and an escape from reality or whether it is rational, realistic and in harmony with the whole gamut of human thought, feeling, and aspiration.

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[4] Morris Raphael Cohen and Ernest Nagel, *Logic and Scientific Method* (New York: Harcourt, Brace and Co., 1934), p. 127.

Reason, Experience and Experiment

Let us tentatively seek to make clear what is involved in a conception of the nature of reality as a whole. We shall see more clearly later on how philosophy and science in all their branches, whatever other mainsprings they may have, are founded on a faith in reason. Reason is involved in all they achieve or seek to achieve. If this faith in reason takes for granted that there are logical laws or rather laws of implication inherent in the structure of reality, the so-called laws of logic as defined by modern logicians are no longer the subjective laws of thought which by some miracle of pre-established harmony leads us to the truth, but the objective laws of implication which thought discovers.[5]

Science, however, emphasizes the empirical method and the techniques of the controlled experiment and demands of any hypothesis not only that it be rationally consistent but that it be subject to empirical verification. It becomes evident at once that no statement referring to the nature of Reality or even to physical nature as a whole, can be verified. This includes even such hypotheses as the uniformity of nature or the conservation of energy or the increase of entropy. No one can drag all of experience, the whole of space, the totality of life and its history into any laboratory or into the range of an observation to prove that what is true of any part thereof is true of all the parts or that a value ascribed to any part of it, such as personality for instance, must necessarily pervade the whole.

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[5] Cf. Bertrand Russell, *Our Knowledge of the Physical World* (New York: W. W. Norton & Co. Inc., 1929), p. 218, and Morris Raphael Cohen and Ernest Nagel, *Logic and Scientific Method* (New York: Harcourt, Brace & Co., 1934).

Nor does inference from sampling help us in this dilemma. A physician may select at random fifty patients suffering from a disease in some hospital he is in charge of, and treating them with the same drug, find that they all recover. He will be justified in feeling that he has demonstrated the worth of his treatment. But he will never shut the door against the possibility that some patient or other may react unfavorably in areas outside the diseased area, to one or more phases of the treatment. The physicians speak of deplorable side effects. No one can ever prove that a treatment will be effective in all cases where the disease is present. The sampler takes for granted a certain typical condition in most of his patients. *What is true of all humanity can never be verified under laboratory conditions.* The observer himself may prove to be the exception. What verification can do is to prove a negative universal. The drug will be successful where the general state of the patient is not adverse to its administration. Laboratory experiments can explode general hypotheses, they cannot establish them. The success of repeated experiments can only lead to an increase in the probability that the same causes will produce the same effects, until to doubt becomes tantamount to a dogmatic skepticism which would paralyze all human activities.

I entertain not the slightest doubt that if the wires have not been tampered with and the batteries are in good order, my doorbell will ring if someone tomorrow presses the button. I have every reason so to believe. It is, nevertheless, a firm belief I hold and a conviction it would be folly to gainsay. But no one in any laboratory has ever demonstrated that it must always be so. Some unforeseen event in outer space may transform the whole electro-magnetic field in which the bell had previously operated in the orderly fashion just described. Thus, physical laws or ways of behavior have been transmitted to us through the observations or inferences of many scientists, been corrected or confirmed in numerous laboratories and have built up a tremendous presumption in their favor. What they have confirmed is our *faith* in the dependability of these findings.

Whatever conclusions we shall then arrive at concerning the nature of Being or Reality or God as a whole must be stated with the agnostic reservation that it can never be verified. We shall never live to see the atheist fallacy, if it be a fallacy, exploded in the laboratory of some theological college.

Logical positivism, as I understand it, avails itself of this reservation to challenge the legitimacy of any proposition dealing with the universe as such, its nature, its quality or its value. It declares such propositions to be meaningless or at least logically inadmissible. Hamlet makes no sense when he ponders the question, "To be or not to be." He should have spelled it all out in more specified detail, "Is it worth my while to keep on living in this murderous court?" or he should first have composed a discourse on what he wants out of life and confined his questions to his own case instead of sitting in judgment on life itself, life with a capital "L." Job was silly or just pathological when, in the face of the prevailing dogmatic optimism, he cries out, "Man is born to trouble as the sparks fly upwards" even though men found themselves again and again between the hammer and anvil of hope and despair as God, in the forge of history beats out the fine edge of man's humanity. Even the great Pharisaic schools, not only the Greek academies, are said to have debated through the years such a question as, "Were it better for man never to have been created?"

Yet, according to the positivists, all that literature which from the beginning of recorded history deals with man's meditations or "musings," as the philosopher Peirce would have it, on Nature or Life or Love or Beauty, on Infinity and Eternity, turns out to be a storehouse of meaningless propositions no matter how edifying they seem to be. There is a certain gain to philosophy in that careful analysis of the positivists insofar as it aims to reveal the difference between the verifiable and the plausible or suppositions. When, however, we are bidden to rule out the unverifiable from all philosophical consideration, to give no heed to such rational conclusions as are themselves beyond scientific verification, we are simply invited to join that revolt against reason to which so much of the nihilism of modern life can be ascribed.

We are ready now to define what we mean by a rational view of the universe, of the sum and substance of all being, of that Reality beyond which there is nothing. We mean some hypothesis which has the virtue of inner consistency (is not self-contradictory) which does not run counter to any of the verifiable truths which science may establish or has established and which, if true, would elucidate more plausibly than alternative hypotheses the largest possible area of human experience.

Real and Unreal

Since we have spoken of the Real and even of the whole of Reality, I think some explanation ought to be made as to what we mean by real and unreal. I use the term Reality in the broadest possible sense. Mr. Pickwick is as real as my next door neighbor. So are the six characters in search of an author in Pirandello's play. Fortunately, or unfortunately, my neighbor inhabits the same space and time in which I live out my existence, whereas the interesting immortals of fiction are figments of their authors' imaginations and dwell in the imagined space-time of play and novel. We shall include among real things found in the world of human knowledge or experience, the energy of the exploding atom, stars and galaxies, the vision of Isaiah, the beauty of a sunset, the sweat on a toiler's brow, the ecstasies of young love and the agonies of those who died in the gas chambers, the wisdom of Confucius and the discovery of America—these all are "reals" as are facts similar to these.

One thing only is required if they are to have entree into the world of the real, if they are to be recognized as being something and not nothing; *they must be capable of serving as the subject or predicate of some intelligible proposition* (one that is not self-contradictory or a mere jumble of words).

I say, for instance, that Pegasus is a winged horse. I know that there neither are nor ever were winged horses in any zoological classification. But Pegasus is a figure in Greek mythology and, therefore, a creature of the Greek imagination. The Greeks were a people with minds capable of memory and imagination and, therefore, of poetry and art. They functioned through brains subject, like the rest of the material world, to all the laws of physics and chemistry to which planets and stars are also subject. Pegasus, therefore, is a phase of nature. He has a place in human history. He is not an animal, it is true, but a *fact in a wondrous mythology* created by the genius of a great people. When, therefore, I say "Pegasus is a winged horse" I am saying something perfectly intelligible, something that has meaning for every educated man. The neon lights above the properties of great oil companies even today display his glory.

Should I venture the statement, however, that the horse Pegasus is the Cheshire Cat, I would be saying nothing at all about reality. The Cheshire Cat has its place in fantasy as has the winged horse, but neither in actual existence or in the arts or in the individual imagination, is it possible to identify a horse with a cat. One may speak of a horse walking *carefully as a cat,* as you can speak of him having wings *like a bird.* One may praise the cat for running off *like a race horse,* but these are properties attributed to each without intent of describing their essential natures. The predicate "cat" does not define the subject "horse," nor can the subject horse imply the predicate cat. The statement would be a self-contradiction. We are back to Aristotelian fundamentals. In the same context of experience, "a" cannot be both "a" and "not-a." A horse is not a cat nor a cat a horse. It is all as simple as this. Whatever judgment makes sense, points to something real.

Let us not confuse truth with reality at this point. A fallacious judgment about something real is always possible.

In the statement, the earth is flat, I am asserting an untruth. I am making a fallacious statement about something real. "Earth" and "flat" both represent phases of reality. They are not essentially contradictory. The earth might possibly be flat but is, in fact, spherical. Should I state, however, "a sphere has a perfectly flat surface," I would, on the contrary, be talking nonsense. Such a statement cannot possibly refer to reality. No change in nature could make it true. Let me again sum up; anything to which an intelligible judgment refers is somehow, in some manner, real.

The subject we are discussing has, in more recent times, been complicated by the emphasis placed by science on natural processes rather than on static patterns. Examine the propositions—an egg is an unhatched chick or a chick is an egg fully hatched. These affirmations make sense even though we may admit that a chick is not an egg and an egg is not a chick; or again, man is a developed ape and an ape (of a certain kind) is an undeveloped man. In the former case, we would point out that a chick is not a chick save *after* the hatching and the egg is not an egg save *before* the hatching. Now, man is not an ape and never was one. Man made his appearance after certain mutations or transformations in apelike creatures were fostered and selected by nature for survival. This process we call evolution. Again, the ape was never a man save that before this process began, man's ancestors were apelike. The process whether of hatching or of evolution is neither an egg nor a chick, neither an ape nor a man but a process encompassing them both. When we speak of an affirmation being self-contradictory, we imply that subject and predicate contradict one another *when viewed in the same context or perspective,* not from different instants in a time sequence. "Abraham Lincoln was very little" and "Abraham Lincoln was very tall," are not contradictions if one statement refers to his babyhood and the other to his maturity. Words as words never contradict one another. In an intelligible sentence, they are symbols employed to convey a *coherent context.*

Chapter II

ONE AND MANY

The One and The Many

Some consideration of the problems concerning the One and the Many, I have had occasion to touch upon in the third chapter of *The Moral Life of Man*.[6] I present them here in expanded form and with certain additional insights since gathered because they are the only pathways that can lead to a definition of God as being.

The relation of the One and the Many has always been the primal riddle which monotheist philosophy has had to face. No philosopher, so far as I know, from the earliest Greeks to Herbert Spencer, or from St. Augustine to Maimonides and on to Spinoza, has ever been able to state plausibly how the simple and the undifferentiated ever became multiple and diverse. Or, to use the language of theology, how the one God in His self-sufficient and infinite perfection could have become God of His imperfect and fragmented world.

I use the word "become" because it indicates a process and suggests that the conversion from the one to the many took place in time. If God existed as the absolute "One" before the creation of the world, then it is hard to conceive why a particular instant of time should have been the signal for the evocation of creative energy out of perfect self-sufficiency. Besides, any such scheme subtly takes for granted that time itself was uncreated and God had to wait upon its passing as the occasion if not the condition, of His creativity. Some even among the Jewish scholastics accepted the Aristotelian notion that matter (as pure potentiality) was distinct from God and co-eternal with Him but many, including Maimonides with more or less consistency, insist that time could only make its appearance with matter and motion and, therefore, the temporal order itself was a creation of God.

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[6] Jacob Kohn, *The Moral Life of Man* (New York: Philosophical Library, 1956), p. 79.

Even Philo, the great Alexandrian who sounded the keynote of the whole scholastic enterprise which sought to reconcile the God of revelation with the God of philosophy through luminous reinterpretation and subtle criticism of both, declared that creation was not in time; that the six days represented a creative order, that the order began with the "being of that intelligible world" of which Plato speaks which is usually described as the world of ideas. This Philo calls *logos* and it plays the central role in Philo's own philosophy. Wolfson is at pains to point out that, according to Philo, the matter out of which the world was created and the *receptacle* or void within which creation took place according to Plato, were themselves created beings.[7] Nature, in the space-time sequence, shapes, generates, transforms, but never creates—never brings into existence from non-existence but only molds and remolds the previously existent. Time itself begins and ends in the eternity of God. Eternity is non-temporal, not merely everlasting.

The Death of the Physical Universe and a Scientific Dilemma

The comforting thought that evolution is to go on and on and on forever, here or, in the case of some astral accident, on some planet other than our own, is no longer held necessarily to be the case by many physicists and cosmologists. There may be an end to the world of matter. The universe is running down, entropy is increasing, the potential energy of the world may sometime be completely exhausted. Matter will have been disintegrated by radiation. There will be no time and space because space is that field in which physical bodies have location and movement versus one another and time is the field from which these same bodies derive velocity and duration. There is no endurance and no motion where nothing either occupies an extended space or has the energy to move.

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[7] Harry Austryn Wolfson, *Philo* (Massachusetts: Harvard University Press, 1948), p. 305.

We are left with a pretty dilemma. It is cooked up not by theologians this time but by the scientists. The disappearance of a physical universe into nothingness or into timeless spaceless being without mass or energy is surely as startling a miracle as the creation of a world out of nothing.

If nature is running down, who or what wound it up? Will some mysterious key again tighten the mainsprings of being that the wheels of the great mechanism may turn once again? Some astronomers like Fred Hoyle[8] have tried to allay our fears by suggesting continuous creation as the only solution. Religious thought is no stranger to the idea that "God renews every day continually the work of creation." Fred Hoyle has again defended this position versus Professor Ryle of Cambridge University.

At any rate, to understand the possible birth and death of the physical universe, we must point to something beyond space and time, beyond matter and energy, beyond cause and effect, beyond actual existence—to a realm of creative possibility by virtue of which actual and existent things become possible and possibilities become actual.

Further Thoughts on Creation

If, as Whitehead maintains,[9] creativity is the final metaphysical principle of explanation, the world is flooded with divinity. "In the beginning God created the heavens and the earth" must be understood to mean: the beginning of all things in heaven and on earth are in God's creativity. It did not take place before nature came into being and it did not cease after it came into being because before and after are temporal terms relating natural phenomena. Creation is not the cause of things any more than things are the effect of creation. Everything in time and space with all their qualities and relations, every moment and point in the space-time continuum in which they find themselves are instances, not effects of that creativity. *They exemplify creativity, they do not merely follow from it.*

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[8] Fred Hoyle, *The Nature of the Universe* (New York: Harper and Brothers, 1950), p. 124.

[9] Alfred North Whitehead, *Process and Reality* (New York: Macmillan Company, 1930), p. 11.

Yet, space-time and causality are not mental constructs but space is that order in which existent things are or can be together at the same time, and time is that order in which existing things can be in sequence at the same location. Causality is the order in which things move or are transformed in their action upon one another through the space-time which they occupy. The various types of order are not imposed upon the entities which illustrate them, they come into being with them. The varying physical entities and objects were not first created and then set in a spatial-temporal gravitational or magnetic field—like little diamonds laboriously set into a gold wedding band. If the earth and the sun themselves occupied no space, it would be meaningless to speak of the space between them. It is because they each occupy space of a definite magnitude that we can measure how much larger or smaller is the space between them than the space each occupies and what would be the action and reaction of one upon the other through that spatial field of force, gravitational or electrical, which is the result of their togetherness. Einstein's discovery of the relativity of space and time, that is, of a space-time continuum in which each is involved in the other, both simplifies and complicates the picture, especially if you add to it the final insight that mass and energy can be expressed one in terms of the other.

But for our purposes, the situation remains the same. The physical universe or nature is energy in the space-time continuum. It is such a continuum because every elemental entity is a drop of energy. Nothing whatever in nature can be thought of or imagined as originating outside of the continuum and then forced into it as if into some pre-existent framework.

Herbert Spencer's definition of evolution laid itself open to grave criticism when first it appeared. He defined it as a process by which the homogeneous and the undifferentiated transformed itself into the heterogeneous and the differentiated. If protoplasm was once homogeneous, it must have been the environment which stimulated the transformation. But which environment? The ground immediately in contact with it, the earth, the cosmic environment which determines the state of the earth, its temperature, its gravitational pull, its seasonal changes? We can go on and on until we again face the question, how does the whole determine the nature of the part? Did the physical universe itself somehow make the creative decision which produces multitudinous diversity out of simple undifferentiated unity? If so, we are back to causeless, miraculous creation. The simple One decides to become manifold. Or, is there a creative realm which calls into being space-time itself with all the creatures that exist in time and space—not apart from them?

Should this be the case, then reality *eternally* transcends mere existence. Since it embraces all possibilities as well as all actualities and finds expression in that *decision* by virtue of which in every instant of every cosmic process, possibilities take on actual existence and some actualities become possible. It cannot be said of any actual thing that it was never possible. One might object that it was not possible for a plane to lose its wing before there was an airplane in existence. This is not quite true. The truth is that it was not possible for a *particular* plane to lose its wing until that *particular* plane actually existed; but nature as a whole made possible the invention of the flying machine since it made possible in the course of nature, man himself, his history, and his many works. The loss of the wing was a tragic incident in that same history. We know now that it was possible because man, his history and his machine became actual.

Scattered References in Literature to the Many and the One

There are several impressive descriptions of the many that yet owe their being to the One, in the high literature of monotheism. Thus, in the 148th Psalm, all creatures are bidden to "Praise the Lord for He commanded and they came into Being."

We are interested in observing how the poet itemizes the main features of the cosmos and the more immediate world in which he lived. He seems never to tire of accentuating the puzzling multifariousness of things. Here is the list:

> His angels and His hosts
> Sun, moon and stars of light
> The heavens of heavens and the waters [10]
>   that are above the heavens
> Earth, sea monsters and nethermost depths
> Fire, hail, snow, mist and storm wind
> Mountains and hills
> Fruit trees and cedars
> Wild beasts and cattle
> Creeping things and winged fowl
> Kings of earth and their peoples
> Princes and judges of the earth
> Young men and maidens, old men and youth

The poet concludes with the exhortation:

> Let these all praise the name of the Lord
> For His name alone is exalted
> His glory is above earth and heaven.

We moderns, in contrast to the medievals, are sometimes inclined to impute to familiar lines out of the classical literature of our religious tradition, a naïveté that does them scant justice. After what has been said of the heights above the heavens and of nethermost depths, we might well render the final words of the Psalm "His essence reaches higher than all imagined heights and deeper than all possible depths." Not bad for a lyric poet before the days of modern science, or that scientific mysticism in which we can now sometimes indulge ourselves.

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[10] The elemental or primal waters.

The time inevitably does come to poet and thinker alike as it came to that delightful creature of fantasy the Walrus in Carroll's *Alice in Wonderland,* "to speak of many things," including of course "cabbages and kings." It should not surprise us that this illuminating nonsense was composed by a mathematician. People who deal with such oddities as the square root of minus one are no strangers to symbolism and fantasy.

It is evident that the first step in any realistic philosophy is to admit that the world is made up of many things—things actual, imaginary or speculative—whether or not they can be included in the considerations of the walrus. Cabbages and kings, good and evil, pleasure and pain, stars and galaxies, mathematical signs and religious symbols all have their being in that real world which man must confront and with which he must grapple. Yet, has anyone from the beginning of civilization ever believed that these were anything but the many realities of the one world and that the world presents itself to thought and life as a lure and a threat and a baffling challenge just because it is made up of so many contrasting and paradoxical things which keep our heads and hearts in a whirl? We have already demonstrated that if "cabbages" occupied one universe and "kings" another, they could never have related themselves to the experiences of even a walrus in wonderland. Being related to the walrus, they are necessarily related to one another since two things related to a third are related to one another. They inhabit some field of being which makes them in some definable fashion relevant to one another.

Let us, then, sum up our findings. We venture the affirmation that Reality or Being is many and yet *is somehow one*; that creativity is not a process at a particular time, it is in all time; that pure unity and simplicity never had actual existence in space and time as the generator, celestial or mundane, of the many.

The Primacy of the One

The one and the many, we might be led to suspect, have no meaning by themselves but have largely reciprocal validity. The whole is never one save by virtue of the parts that constitute it. A whole apple is never whole save as it contains both halves or because it has been unbroken or still consists of skin and meat. The one house does not exist independent of the rooms that constitute the house. Remove all the rooms out of it and you break down the house, for a house must have at least one room. A living organism is not one organism apart from the cells and tissues that together make it one. Every individual triangle requires three angles to define it as a triangle.

And yet, despite the statement made above, the relationship of part to whole is not quite reciprocal except structurally. The nature of the whole *transcends and is logically prior* to the parts. The relation of the parts or aspects or phases of being to the whole is never merely conjunctive. Two half apples, or apple peel and apple meat do not constitute one apple. It is only if they constitute parts of the same apple that they make the apple one. If I cut the apple in half, the two halves will never again constitute a single apple. Ten rooms never make a house unless the ten rooms referred to already are the ten rooms of one house. Ten rooms in ten different hotels can never make one house. Three lines and three angles do not necessarily constitute one triangle. They may be on different planes. Only if they are found in the same triangle do they constitute its parts. So it is with cells and living tissue. The organism is nothing outside of its cells and organs, yet the cells and the tissues of a turtle are what they are because they are found and are related together in some actual turtle. To eviscerate the turtle and make a heap of its parts will not reconstruct a turtle. So it is with the nature or essence or being of the

Whole—the whole of Reality with its concrete entities, with its universals of relation, quality and value must be viewed as logically determining the role these latter play in the cosmic drama of nature and life. *The play determines the role of the actors, not the reverse.*

Chapter III

GOD AS THE WHOLE

Preliminary Definitions of God as the Whole

We are now ready for the further definition of certain ideas which will receive more complete elucidation as we go on. It has become evident that we are seeking a view of God and His unity which will avoid the necessity of trying to prove how *in the course of time* from the simple and the unitary the many came into being. The following statement despite its sketchy character expresses such a view. The whole of reality in its distributive multifariousness—this, that and the other indefinitely—is the universe or the world of our experience, the same reality in its primal or transcendental wholeness or singularity is God. This, that and the other, things, their relatedness, their processes of becoming, are all of them, phases or modes of His being.

God is not one in addition to the infinite multiplicity that makes up the world, netiher is God one as the mere sum of these multiplicities. His unity again is not the additive unity of the parts combined to make a whole. Rather is it that unity by virtue of which every element actual or possible, ideal and physical, finds its relation to every other; through which every novelty in nature or history emerges out of the settled background of what already is, and points to some beyond yet to be. It is, therefore, the unity through which all the characteristics and phases, concrete and universal, can be recognized in their separateness and yet forever connect with one another the further our explorations reach. His is supreme and *all inclusive Being*. God's presence in them all gives them being; their presence in God gives them unity.

The logical as in fact the psychological priority of the Whole and, therefore, its transcendence over any part or combination of parts, is apparent wherever we turn. Nothing has individual significance or can be imagined to have such significance save within a larger unity which endows it with particular meaning. It is an error to think of the mind as originally aware of a multiplicity of things in varied relations one to another. The area of awareness in the infant is at first an undifferentiated and unbounded extension within which it finally carves out many objects held together in various relationships and distinguished by many qualities. The experience of depth or of the space continuum is brought about only as the child wriggles its body and stretches forth its hands and strains to focus its eyes. At last it discovers *itself* as one more thing in a continuous space which has no breach but only a beyond. Finally, the subject claims its object. The ego is born and the child uses not only the third person or the mere verb "baby wants" but "I want," "I feel," "I hurt." The many concrete things, their qualities and their relation and transformation come to our attention only as *abstractions from a whole region of awareness.*

The mass and the molecule, the atom and the quantum are only a series of successive diminishing fields of energy within larger fields of space-time existence. The larger, as we have noted, is not compounded of once unrelated parts. On the contrary, the latter must be viewed as abstracted from the more inclusive. Science and philosophy get to know the microscopic by and through analysis of the macroscopic. Qualities—redness, loudness, beauty—become known by abstraction from the concrete entities which they qualify. They are not ever seen independently and then, as it were, pasted on to the object that displays them. So abstract a concept as peace becomes a social ideal only because we sometimes do discover it either within ourselves or in a society at peace and carry it with us as an ideal through centuries filled with war and the desolations of war.

Environment and the life it environs are not found originally apart from one another. They too are abstractions. Can we imagine an amoeba without environment and then suddenly introduced to an environment as a guest to a drawing room? *Environment enters into the very definition of life and life into the definition of environment.* They are again abstractions from a history in which they are both involved. We hold them apart only for purposes of definition so that we may again unite them for purposes of explanation.

No cells ever generated a living organism except insofar as they were first involved in a living organism from which they emerged or from which they parted company, to enter into relations with a common environment to which the previous organism was also related. This does not imply that protoplasm may not have originated through some synthesis of inorganic substance. The fact remains however that the inorganic matter so synthesized as well as the organism now making its appearance, were elements of a substance which was neither organism or environment, before the transformation took place, but had the potential of both. Such synthesis cannot be called generation. The young of no animal was ever born into a vacuum but always within some biological family or ethnic group—some Whole that had previously existed and now claims it and determines its status.

In other words, every individual thing of whatever kind —a mountain, a coral reef, a grain of sand—attains its concrete individuality, emerging from some Whole previously existent and relating itself to other beings within a wide skein of relations (qualitative, quantitative, causal and rational), which themselves make possible new emergents and new transformations that may today still lie beyond all ken.

The whole of being is never something apart from the many of which it is the whole and yet *it is never exhausted by their multiplicity,* actual or possible.

The main question of theology remains: is there anything about this whole of being which would justify us in identifying it with God as He functions in the religious life?

In Jewish theology, I have often pointed out, the dominant theme is always the mystery of the Unity. So far from considering the unity of God, a simple creed easier to understand than the gorgeous multiplicity of a heathen pantheon or even the paradox of the Christian trinity, Jewish thinkers were keenly aware of the difficulties in the affirmation of the unity. In some stanzas of The Royal Crown by the philosopher-poet Ibn Gabirol, that philosophical perplexity is beautifully expressed:

> "Thou art One, the beginning of all computa
> tion, the base of all construction.
> Thou art One, and in the mystery of Thy
> Oneness the wise of heart are astonished,
> for they know not what it is.
> Thou art One, and Thy Oneness neither
> diminishes nor increases, neither lacks
> nor exceeds.
> Thou art One, but not as the One that is
> counted or owned, for number and change
> cannot reach Thee, nor attribute, nor
> form.
> Thou art One, but my mind is too feeble
> to set Thee a law or a limit." [11]

Gabirol, as we have seen, was both a philosopher and a poet of the synagogue. As philosopher, he was claimed by Moslems and Christians alike before the original Hebrew of his manuscript Fountain of Life, was finally identified. He is usually classed among the neo-Platonists of the scholastic period, yet the same philosophic wonder characterizes the Aristotelians, especially those who refused to grant primal matter co-eternity with God. The mystery as we have already seen, consists largely in how this primal transcendent unity could be the essence or source or creator of the multifarious and imperfect world. They proposed several solutions upon which we cannot dilate at this point.

For us, I think, the mystery must be stated differently. We ask, how can the rich multiplicity of the universe with all its striking contrasts and contradictions yet give some hint as to the nature of the One and even lead to the idea of unity as a *rational explanation for their togetherness in multiplicity.*

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[11] Solomon Ibn Gabirol, *The Kingly Crown*. Translated by Bernard Lewis (London: Valentine-Mitchell, 1961).

Frankly, this idea of God's unity must result in a kind of pantheism provided the emphasis is placed on *theism and not on pan.* All of nature, all phases of the physical universe are within God and God is in them all.

Yet we dare not say that He is contained within their boundaries. God, from our point of view, is the realm of the possible, the creative and the actual insofar as they have relevance to one another. The infinite multiplicity of His creatures and the processes determining their becoming do not limit the scope of His being. He is *in* nature but not *within* its confines.

Some hint of this kind of pantheism runs throughout the Judeo-Christian tradition—both prophetic, mystical and philosophic. The logicians are as prone to it as are the romanticists. Some allusions to such systems of thought I had sketchily introduced into *The Moral Life of Man.*[12] I repeat them here somewhat expanded and with many recent additions because they are germane to the idea of God we are here developing in relation to the cosmic process known as the evolution of life.

The 90th Psalm begins

"Lord thou hast been our dwelling place in all
  generations,
Before the mountains were brought forth
Or ever thou has formed the earth and the world
Even from everlasting to everlasting thou art God."

Instances in Medieval and Modern Thought

We have, furthermore, the luminous interpretation in rabbinic literature of God's omnipresence. He is frequently called "The Place" and this is interpreted to mean neither His heavenly abode, as in the third chapter of Ezekiel, nor merely His being everywhere, but more precisely "the Holy One, Blessed be He, is the *Place* of His *universe* and not the universe the place of Him." Spinoza ascribes this view both to the ancient Jews and to Saint Paul when he affirms, "I assert that all things live and move in God." [13]

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[12] Jacob Kohn, *The Moral Life of Man* (New York: Philosophical Library, 1956).

The following lines from the *Song of the Unity* [14] are eloquent with this description of the unity of God. Life and nature find their being in Him.

"All that was at first
And all that at last shall be
All the creatures and all their deeds
And all their spoken words and thought
From beginning to end
Thou knowest them all.
And thou forgettest not
For thou art co-present with them.
There is nothing so secret that it is hidden
  from Thee
Events of the future and of the past
With Thee are they one. . . . .
For thou art from eternity to eternity
They are all in Thee and Thou art in them all."

The last lines we have quoted remind one of Meister Eckhart who is very nearly contemporary with the Jewish circles from which our mystic poem derives. Rabbi Judah Ben Samuel, to whom the above verses are usually attributed, died in Regensberg in 1217. Eckhart was born in 1260 and is usually acclaimed as the earliest speculative mystic of Western Christianity. He is said to have remarked, "God is all things, all things are God. . . . The eye with which I see God is the same eye with which God sees me. My eye and God's are one eye." Brinton speaks of this attitude as "aggressive mystical pantheism." [15]

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[13] Cf. Harry Austryn Wolfson, *The Philosophy of Spinoza,* Vol. I (Massachusetts: Harvard University Press, 1934), p. 196.

[14] Read in the Synagogue on the eve of the Day of Atonement.

The subconscious logic of medieval Jewish mysticism, especially that of the Kabbalah, as well as strains of certain Oriental thought, show a similar attitude. Thus the impression one receives from this literature, especially from the Zohar,[16] is that the Absolute, the *Undifferentiated Infinite (the En Sof)* cannot possibly account for the world and cannot become an object of worship and adoration. Where everything is equally possible, nothing can actually happen. In this sense, the infinite is sometimes equated with nothingness by some of the mystics (as in certain forms of modern existentialism). God, however, to the author of the Zohar, is not merely the infinite. He is the infinite as defined by His self-revelation in the Sefirot. These are attributes of His which eternally emanate from the infinite, not as divine persons but as creative potencies. They are ten in number. (The word Sefirah in early Jewish speculation means number or dimension as in the Sefer Yezirah.) [17] To wit: Wisdom, Understanding and Knowledge, Love, Power and Splendor, Victory, Majesty and Sovereignty and, last of all, the Foundation—then we arrive at the mundane world of man. Together, they constitute the realm of Divine Being.

In this scheme, man plays his part not only as the end product of the divine travail but as a participant helping by his deeds to activate the higher realms upon which his being depends. All reality, we might say, becomes a *spiritual field of force* with the Unknown Infinite at one pole and man at the other.

In a new climate of thought, disclaiming all mystic feeling and repudiating both revelation and scholastic rationalism, Spinoza becomes the champion of a thoroughgoing pantheism. The substance of the world is one, infinite and absolutely free and that substance is God. Its attributes are infinite in number though the human mind distinguishes but two—thought and extension. All particular things, all actual entities are *modes* of substance in one or more of its infinite attributes. There is not only an infinity of attributes but each attribute is infinite. Each mode is what it is by virtue of its necessary place in the being of God. Such a God, if properly loved through intellectual apprehension and joy in His eternal perfection (where nothing can possibly be other than it is), can also be said to love man since, in loving Himself (which to Spinoza means enjoying, in thought, His own perfection) He must love all the creatures who are modes of His own thought. The will, it seems, is only seemingly free but thought can and does accept truth and in the course of such acceptance, man attains Blessedness.

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[15] Cf. Crane Brinton, *A History of Western Morals* (New York: Harcourt, Brace and Co., 1959), p. 191, note 18.

[16] The Book of Splendour is the central text of Kabbalism.

[17] *Sefer Yezirah—Book of Creation*—One of the earlier mystical classics in Jewish literature.

This is not the occasion to attempt a critical appraisal of Spinoza or to point out how we may be inclined to deviate from some of the conclusions he reaches. The *Ethics* remains, however, a magnum opus of deductive logic.

It will always be a moot question among interpreters of Spinoza whether Spinoza, who aims at complete repudiation of the supernatural, only uses the term God as a sort of courteous gesture to placate the prevailing religious tradition, whereas he means only to describe substance; or whether as in the closing paragraphs of the *Ethics* where *love* and *blessedness* become key concepts, he uses the term Substance for philosophical clarification but means God all along. My impression is that Wolfson in his great work on Spinoza, holds the former view. On the other hand, a very interesting little book by Ruth Lydia Saw of the University of London, on *The Vindication of Metaphysics—a Study in the Philosophy of Spinoza,* takes quite the opposite point of view. I find myself, on the whole, in agreement with her conclusion though I would not make so good a Christian of him as she attempts to do. "Infinite substance" she explains, "turns out to be a person, a fit object for love, veneration and worship and when Spinoza comes to the end of the Ethics, he allows his language to become suitable for the description of such a person. I think this is a legitimate process. Having in mind a person known to his forefathers by revelation, even though he rejects their ways of speaking of this person, Spinoza deduces from the idea of being such a description that can fit only this person." [18]

Both Samuel Alexander in *Space-Time and Deity*, and Whitehead who sometimes calls himself a pluralist, confess their indebtedness to Spinoza in more ways than one. Says Alexander, "Space-Time can only be described not as one and still less as *a* one but as *the* one; and only then because the quasi-universal adjective serves once more to designate not its number but its infinite singularity; or, as is more clearly still expressed by calling it *Substance*, that it is not so much an individual or a singular as the one and only matrix of generation to which no rival is possible because rivalry itself is fashioned within the same matrix." [19] "Space and time are, *in the words of Spinoza*, though not with the significance which he attaches to the phrase, attributes of the universe or Space-Time." [20] God is the whole world as possessing the *quality* of deity; of such a being God is the body and deity the mind. But this possessing of deity is not actual but ideal. As an actual existent, God is the infinite world with a nisus towards deity (the quality of deity is always some higher value still to be achieved—J. K.) I understand this to mean not that God is *non*existent but that He is not merely existent. He is real in another sense. Nor can existence ever actually contain all those infinite gradations of ascending qualities which are the hallmark of Deity.

Another statement of Alexander's where his pantheism takes on a humanistic tinge is the following, "Our minds, therefore, and everything else are the organic sensa of God. All we, are the hunger and the thirst, the heartbeat and sweat of God. This is what Rabbi Ben Ezra says in Brown-

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18. Ruth Lydia Saw, *The Vindication of Metaphysics—A Study in the Philosophy of Spinoza* (London: Macmillan & Co., 1951) Cf. p. 68 for further views of Spinoza on the inner nature of individual reality.

19. Samuel Alexander, *Space, Time and Deity* (London: Macmillan & Co., 1927) p. 339.

20. *Ibid.*, p. 342.

ing's poem when he protests that he has never mistaken his end, to slake God's thirst." It is interesting to observe how easily modern thinkers who deal with mathematics and logic grope for illustrative material in poetry and mysticism.

Whitehead, though he differs greatly from the absolute monism of Spinoza, nevertheless concedes large areas of agreement. "The Philosophy of organism (the name he gives his own) is closely allied to Spinoza's scheme of thought." "The attraction of Spinoza's philosophy lies in its modification of Descartes' position into greater coherence. He starts with one substance, causa sui, and considers its essential attributes and its individualized modes." "In all philosophical theory, there is an ultimate which is actual by virtue of its accidents. In the philosophy of organism, this ultimate is termed creativity and God is its primordial non-temporal accident. In monistic philosophy, *Spinoza's* or absolute idealism, this ultimate is God." "One side makes processes ultimate, the other side makes fact ultimate." [21]

It is evident that from our point of view, the ultimate is not process but God as Being. On the other hand, we refuse to assign to the ultimate mere actuality. It transcends the actual since it also embraces the possible, known or unknown, and that decision between possibilities which evokes the actual and thus the cosmic process.

We cannot but wonder whether Whitehead's "creativity" is very different from Spinoza's emphasis on *natura naturans.* It must not be overlooked that Whitehead is also responsible for the statement, "The safest general characterization of European philosophical tradition is that it consists of a series of footnotes to Plato." In reference to his *eternal objects,*[22] he ventures upon such a footnote, "The things which are temporal arise by their participation in the things that are eternal. The two sets are mediated by a thing which combines the actuality of what is temporal with a timelessness of what is potential. This final entity is the Divine element in the world."[23]

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[21] Alfred North Whitehead, *Process and Reality* (New York: Macmillan and Co., 1930).

[22] Ibid., p. 32.

A theistic thinker today is likely to reflect either the epistemological systems of Kant, Hegel or the absolute idealists such as Royce, or he may build upon the pragmatists from Peirce to Dewey who have all made important contributions to which we shall occasionally allude. Then again, he may accept some form of existentialism which would rule out altogether philosophic and conceptual thought as a suitable approach to God. Otherwise, only some form of Spinozism is left him, modified perhaps, by the deeper insights of Platonism. The word Substance has too static a connotation today and will, doubtless, be replaced by some word which connotes process as well as form.

Quite recently, a new book has appeared by Paul Weiss who had previously published a volume on *Reality* and on *The Nature of Man* as well as a number of other philosophical dissertations. The title, *Modes of Being,* and its unabashed metaphysical tone again suggests a union of Spinoza and ontological Platonism. It begins with a challenge: "This is a book in philosophy. As a philosophical work should, it attempts to articulate a vision of the whole of things."[24] Such daring in an age characterized by the mock modesty of over specialization is indeed welcome.

His main thesis is: "One had, I became convinced, to distinguish and assume, in turn, the perspectives of four distinct realities—Actuality, Ideality, Existence, and God. All four, one had to affirm, are final and irreducible modes of being with their own integrity and career."

As I understand this rather complex and somewhat ambiguous nomenclature, it means, not that any of these things is real apart from the other, but that every fact has its place in the being of God, in the world of the actual, in the field of existence, and, of course, in the realm of ideas or possibility. "God is that being who among other things makes unity of what otherwise would be a detached set of occurrences. He sees to it that the ideal is realized and that actualities are perfected." I can see no objection to this description of the functioning of God. From the point of view we have been developing, such functioning would be too grandiose a task for a god who is merely a *mode of being.*

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[23] Ibid., p. 63.

[24] Paul Weiss, *Modes of Being* (Carbondale: Southern Illinois University Press, 1958).

I still can think of no better phrase than the "Infinite Unity of all Being" which Feibleman uses in his *Ontology.*[25] Feibleman is a realist in the Platonic sense—essences are as real as things. God then becomes what He has popularly been called all along—*Supreme Being.*

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[25] James K. Feibleman, *Ontology* (Baltimore: Johns Hopkins Press, 1951), pp. 190, 195.

Chapter IV

THE WORLD AS RATIONAL

Rationalism or Non-Physical Objects of Thought

We have already had occasion to remark that both science and philosophy have their point of departure in a certain faith in reason, in the feeling that correct thinking will lead to correct conclusions if based upon the appropriate premises. In the physical sciences, these conclusions can often be verified by observation or experimentation.

When we say that reality is rational, we do not mean to assert that the facts of life are born out of the travail of thinking and that God is only a reasoning mind. We mean nothing more nor less than that all things, to wit, all items of our experience, stand in some intelligible relation to one another—though our own intelligence may be too scanty to discover them—that they somehow imply one another. Thus the search for truth is not a game which the human spirit plays with nature for its own delectation, but a serious attempt to penetrate the structure of reality. Through such understanding the human spirit may get to understand itself and the part it must play to survive and advance in the environment which both sustains and threatens it.

In the logical analysis and reconstruction of space and time for instance, we employ points and instants which are themselves not extended in space or time. No infinite adding of point to point creates an extension of one inch. We might add that the elemental unit in modern physics, the quantum is a unit of pure action or energy which itself has no definite space dimension. It is not extended matter.

When we say we must posit such realities, the necessity is both logical and pragmatic. A man tells me he has bought a bolt of cloth which he intends to divide into three parts so that the tailor may make suits for his three children. Were I to tell him that cloth is of such a nature that it can only be divided into two parts, he would look at me in quizzical astonishment if not in shocked amazement. He will simply say unless the cloth is rigid as iron, I can choose any point along the edge to begin cutting, and I can cut narrow or broad strips as I please, and therefore, as many as I desire. Even iron can be divided if you have a blowtorch. It is simply a matter of common sense. The man takes for granted that in any length, there is an infinity of points from which he can proceed with the division. We have already counted among realities the imaginative creations of the arts and spoken of a realm of possibility.

Before we can develop the latter further, we must ask the question: Are the results of our logical analysis, since they are neither physical entities or imaginative projections, merely mental inventions which we impose upon the physical world? Are they innate but subjective ideas, or are they objective realities which are neither mental nor physical? Bertrand Russell in *Our Knowledge of the Physical World* (p. 218), quotes the mathematician Frege to this effect. "There are realities which are objective and not mental, objective and not physical."

Bertrand Russell makes a similar assertion with regard to the forms of logical syllogisms. If I use the classical cliche and say "Socrates is a man; all men are mortal; therefore Socrates is mortal," can I say that the form of such a syllogism has objective validity, that I am not revealing a state of my mind in the process of thinking but the actual relation of entities to one another in universal experience? It is evident that someone may be disposed to deny that all men are mortal. In Christian legend, there was certainly one man who was not mortal but who rose alive from the tomb. Besides, someone may deny that Socrates was a man and claim that he was only an invention of the Greek academies. When, however, we strip the above proposition of its physical and descriptive aspects, we can state them as follows: If (a) belongs to a class of things all of which have quality (b), then (a) must be characterized by quality (b). We have here the pure form of the syllogism. It is valid within its limits, for all phases of our experience. It is not a way of thinking and therefore, subjective. On the contrary, it is awareness *by thought* of the actual structure of the universe. Thus, modern logic no longer defines its subject matter as the laws of correct thinking, which would be necessary if logic were subjective, but rather as the science of implication; the discovery of how certain facts may imply other facts no matter what these facts may be. May we not, therefore, put the question as to whether experience does not involve other types of objective reality which are neither of matter or of mind.

The Nature of Universals

Consider for a moment the perennial question concerning the nature of universals.

There are, first of all, universals of quality. Qualities must not be treated as things; they are not things but are predicated of things or displayed by things to our observation. Things, for instance, cannot share their location with one another in space or time. Two concrete objects cannot be in the same place at one time. This constitutes one aspect of their concrete stubborn individuality as *things*. But two things or a thousand things can share the same quality. The blue of the sky, the blue of a pretty girl's eyes, the deep blue of the sea are one quality, not three. The redness of the rose, the redness of the sunset, the red on a flying bird's wing may all have the same quality, red. The hardness of steel, the hardness of granite, the hardness of the diamond have all the same unyielding quality. Even such different and less obvious qualities like life (in the sense of vitality) or awareness, characterize any number of actual individuals. Qualities are universals because they can be expected to be *anywhere* or *anywhen* whereas a concrete entity is always here and now or then and there once its position is determined.

It should be noted that science, at least in its metrical aspects, gives no account of the rich qualitative nature of the world. It is sometimes supposed that science tells that air waves of certain frequencies equal high C, or that light waves with certain metrical properties equal the color blue. Nothing is further from the truth. All that science does is tell us that if certain waves of definite mathematical value reach the eye and initiate certain physical changes in the cortex of the brain, we are then enabled to *perceive* blue. *Science has to do with perception and the processes involved therein, not with qualitative distinctions.* At no stage is the process characterized by the perceived color.

You cannot equate quantities with qualities or treat qualities as though they had dimension. They would then be quantities and not qualities. Twelve roses may occupy a space twelve times as great as one rose, but twelve roses or a hundred roses are not redder than one rose. The *roses* are more, not the *redness.* When a green leaf turns red in the autumn, the scientist can tell us in a series of equations what physical and chemical transformations had taken place in the leaf so that now it shows redness rather than greenness, but he cannot establish any equation between green and red because there is none; one never equals the other.

Nor can we say with exactness that green has been transformed into red; it has been *replaced* by red. Qualities in different things may be identical, the redness of a rose may be identical with the redness in a flag but qualities can never be said to equal one another so that we may declare that the *greenness* of spring equals the *redness* of autumn.

There are, of course, universals of relation and order. We began with points and instances. There are innumerable other examples that come to mind. Weight may be a universal of physical things in a gravitational field. If I say that two stones weigh two pounds each and together weigh four pounds, I am not adding weight to weight, quality to quality. I am really adding stone to stone on the one scale and discovering that they have the same weight as one larger stone weighing four pounds. Again, let it be clear—we are not adding the weight of one stone to the weight of another. If so, one of the stones would remain weightless and not the two together, but one alone would weigh four pounds. We must remember that weight is a universal of things in a gravitational field. When a body is projected into space beyond the gravitational field of earth, it actually loses weight. It begins to display a new quality, *weightlessness* or *lightness* which is also a universal. When we observed above that twelve roses are not redder than one rose, we do not intend to preclude the statement that now, red is spread through more inches of space than was the case with one rose. In the case of the stones, the weight of two covers more pounds than the one, because we have added the one stone to the other, not the weight of the one to the other. The one still retains its own weight. Adding weight, as such, to weight is treating a quality as though it were a quantity which is an illegitimate process.

So complex a universal as *truth* is in the same logical position. We will take for granted that *truth* and *error* mark propositions, whether written, spoken or merely conceived. The statement that "the sun is larger than the moon" is true. It shares that quality with the affirmation that "the American Revolution began in 1776." Nevertheless, a thousand true propositions are not truer than one proposition. We do not increase the trueness of truth by adding another proposition to those already known to be true. We can speak of many truths, meaning thereby the *many* true propositions dealing with different aspects of nature or of life. All true propositions together—and these are infinite and therefore cannot be enumerated—constitute the whole truth about God and the World. The whole truth about God, could we know it, would not be more true than the whole truth about a mote of dust. Truth is a universal of quality, or value perhaps, which can be shared by many minds actual or possible making judgments that are true or seeking truth in their judgments. For this reason, truth is a value as well as a quality or attribute. Truth, beauty, utility, goodness are among universals of value.

Universals of Order

We then come to universals or possibilities of order. To mention a few—the mathematical, the logical, the spatial and temporal order, the causal order, the social order, the moral order. The first we have already alluded to in discussing points and instances. Some examples are, *before* and *after, big* and *little, left* and *right, plus* and *minus.* These are nonetheless universals because they happen to be universals of comparison and relativity. Everything is *both* big and little. Bigness and littleness imply comparison. Every event is before some other event or after a preceding one and can be so characterized. Plus and minus apply to all numbering whether you number stars or trees or pebbles. The number is always greater than some *other,* or *less* than some actual or imaginary sum. The *causal order* implies that every entity can have the property of being *cause* of some happening or other, and also the *effect* of something that has previously happened. *Causality* cannot be said to have a cause any more than reason has a reason. It is an order shared by all things in actual existence. I use the word thing here in its metaphysical sense rather than in its rhetorical sense. *Kinship* is a universal of social order. *Duty, good, evil,* the different *virtues,* are universals of the moral order. There are types of social order within larger social orders as there are all sorts of mathematical orders within the realm of numbers (the cardinal and ordinal numbers for instance) and it is over-simplification to say that they all display the same relationships. Indeed, there are universals characterizing relationships within each sub order.

Concreteness and Universality

All individual concrete things, all actual entities as distinct from universals, all objects in the space-time continuum have an element of absolute uniqueness. Each is a center of effective energy. Nothing is merely a passive effect, it is also a cause. It acts upon others and resists action upon itself.

It is not mere driftwood in the cosmic process, it helps to direct that process. Each has its subjective pole which can never be made the object of knowledge on the part of any other subject.

I cannot know what God is in Himself and I cannot know what a pebble is in itself. As just this particular pebble, it is more than the sum of its universals. Someone may be able to crush it into powder and analyze its chemical or geological constituents. This will tell us what *kind* of a pebble it was. But this particular pebble never existed before and never will be again. One like it may be made synthetically but *this* was a particular and irreplaceable phase of God's infinite being and only God can understand the unique core of its individuality or, for that matter, of the molecules and atoms constituting it which in their togetherness gave it particular form and quality. As a human being, I may sympathize with my brother in his pain. I may feel pain because others suffer but the suffering which is his, remains nonetheless his own. I may relieve it but I cannot suffer it. This incurable individuality is characteristic of all existence. Whitehead, I believe, wishes to imply this when he says there is no *vacuous actuality.*

Yet this strange phenomenon occurs in reverse again and again. Our encounter with an individual thing, despite our exclusion from its individuality can reveal not only *that* it is but *what* it is, or its *essence.* We are conscious not only that it is a *thing* of *some kind,* but that it is *some kind* of a thing and, therefore, we proceed to define it and classify it. This pen with which I write is not only *this* pen but *a* pen. It is one of a whole set of objects either now in existence or yet to be manufactured. The tree in front of my house is not alone *that* tree, something I can readily perceive but *a* tree, the representative of a whole species of living things some of which have long perished and some of which have not begun to sprout. Indeed, some of these may exist only in an imaginary forest of some artist's dream. The *essential* pen, the *essential* man never had separate being.

You might say that they are concepts and ideas standing for whole classes of individual things, indeed, some philosophers may say they are generalizations from repeated individual experiences; only many such men and only single pens actually exist. Think for a moment, what grounds would there be for generalization were it not that each pen and tree shared with other pens and trees certain qualities or characteristics or universals of order, function, quality, which enable the human mind to invent such an expression as *a* pen, *making each the symbol of all.*

The point of view which emerges from our examination and which is a heritage from Plato and the Greek logicians as reflected in modern realism, is that we can generalize because reality is *generic* as well as *specific.* A generalization is a *subjective* form of thought grasping an *objective* fact, accounting for the essence rather than the existence of things.

Like all universals, essences have no detached and separate existence in the space and time continuum. They do not possess quantity or location or date. The same quality appears in many places and times and is always identical with itself or, if you will, the same quality is shared by many things at once in many different times and places. They are forms of existing things—a thing must be *some*thing. They are the bases for our generalization because they represent the general structure of being. Existent things are nothing else than essences or possibilities, patterns of universals, made actual. They are given concrete individuality through that divine creativity which constitutes the cosmic process.

Whitehead speaks of the concrescence of the *eternal objects* in the emergence of the entity. These eternal objects, he says, constitute the *"primordial nature of God."* God is the transcendent ground of what can be as well as the immanent cause of what *actually is.* All essences are present within His eternal being. He is present within every actual thing He brings into existence. To put it differently, He himself is the essence of their individuality and their generality, too. Some day, we may have a space ship as well as an air ship. If so, then the essence of the space ship is already in being or in God insofar as the latter is the realm of eternal possibility. And every particular space ship will be an instance of his creativity.

If reason, therefore, concerns itself with the science of implication, and logic deals with such universals of relevance as all reality involves, we can set no a priori limits to reason. As facts to be investigated and from which conclusions are to be drawn, intuition and feeling, religion and art, are as truly subject to analysis as are the axioms and theorems of geometry.

The aphorism "there is no arguing about taste" is wrong both historically and logically. What people really mean when they make such an assertion is that it seldom *pays* to argue about taste. It is hard to convince a man that he is wrong when his tastes run counter to your argument.

Historically speaking, however, there is a vast literature which deals in judgments concerning taste. This would include a large section of the literature of art criticism and appreciation and of aesthetics, searching for the essence of the beautiful. Indeed, whenever people gather together in a relaxed mood, in an atmosphere not agitated by political storms or war's upheavals, or when they are not engaged in the academic pursuit of any particular science, most of the argument concerns taste. "What can you see in modern art?" "Isn't that hat becoming to this young girl?" "How could so and so display such bad taste in the decoration of his house when otherwise he shows good judgment?" "Is the style of your favorite author in his last book as sparkling as once it was?" "Last night's play was clever and serious and well acted, but was it in good taste?"

When off their guard, people will always take for granted that there are standards of taste. There is good taste and bad taste and tastelessness in a picture, a book, a dress, or a dinner. People do not hesitate to advance grounds for such opinions even as they would for the truth or error in other propositions. It is not our intention to develop a philosophy of aesthetics or to define good taste but only to point out that taste enters not only into *feeling* but that it is *thought* about and talked about.

Try telling a young man that you cannot understand how he could ever have fallen in love with the young lady of his choice. He may be highly incensed, and may become quite belligerent. What is even worse, he is likely to enumerate a long and tiresome list of virtues and graces of mind and heart and body which make her the perfect object of a man's admiration. What he will never concede is that there are no rational grounds for his love. It is you, he will insist, who cannot understand because you are blind as a bat.

I by no means wish to identify love with reason or the emotion of love with the thought process of the thinker, or view, without suspicion, rationalizations undertaken in the heat of passion. All that I mean to say is that there is nothing which does not also provoke thought, nothing which may not enter into an intelligible proposition, nothing which may not serve as the premise for some inference.

Chapter V

THE APPEARANCE OF THE IRRATIONAL

The Intrusion of Irrationality

As realists, however, we cannot deny the presence of the *irrational* in experience any more than as moralists we can ignore the meaning of *evil.* The irrational, however, must not be confused with the *non-rational.*

There are more keys to reality than reason. Will, feeling, and intuition (including mystical intuition) may justly assert their claims. Love can open eyes as well as shut them. So, in Victor Hugo's great novel "The Man Who Laughs" the blind girl can see the beautiful and earnest soul behind the grin carved forever on the mutiliated face of her lover. She, being blind, alone could see. The lamp by which she saw was her great love. Curiously, "He whose light is abundant" is an euphemism for the man who is *blind,* in the Talmudic literature. There are occasions where the phrase may turn out to be more than an euphemism. The statements welling out of feeling or intuition must be verified by experiment or validated by reason, when they are challenged by those not sharing the intuition.

Consider for a moment three men viewing a mountain—a surveyor, a poet, and a mountain climber. Ask each in turn to describe the mountain. The first will give us a detailed account of its elevation above sea level, the main angles of its sloping sides, their most important deviations, the area covered by its base, its geological history and items of similar character.

The artist also thinks he knows the mountain. He had been gazing at it with rapt wonder from his place of vantage. He, too, observes the peak and sloping sides and jagged rocks, but measurements enter not at all into his description. The mountain, he says, is a thing of flaming beauty. It is not just a lump of earth, it is a beacon in the sky. For see how the setting sun, bathing in light its snowy apex, crowns it with scarlet radiance. He who thinks he will know this mountain by measuring it, is a fool. Only the painter's brush or the poet's song can do it justice. The secret of the mountain, says the artist with deep feeling, is revealed to such as these alone.

The third of our observers will tell us in confidence, I alone know what the mountain truly is. I have once climbed its savage heights and each time I view it, I am tempted to try once more. It is not a thing to be outlined by surveyor's instruments. You can never appraise the mountain by drinking in its beauty from afar. The sentimental aesthete, poet or painter, will miss its true essence. Only one who has pitted his will against its perilous slope and having achieved its summit, looks down breathless and exhausted on the plain below, knows the mountain truly. It is a symbol of peril, pain and power.

Of course, the mathematician may also be a bit of a poet and the poet and climber may not be unacquainted with the alluring symbolism of pure mathematics—but that is not the point. What is important is that we may apprehend reality from many angles. Most of us, I dare say, know more about the world and our fellow men through feeling, will, and intuition, than we learn through observation and inference alone. There are non-rational media of knowledge which a satisfactory view of the nature of being must take into account. They are not, however, necessarily irrational. They may go side by side with reason to enrich that reservoir of wisdom to which poet and logician can both contribute.

The Limitations to Human Reason

The first of these limits to reason is *fact itself*. No matter what may be the fact we are investigating or about which we would frame some hypothesis, we will find that the rational relations in which things may stand to one another never wholly explain the things standing in such relation. Indeed, the "sine qua non" of logical thinking is that in the course of logical analysis, we do not distort the facts. When we manufacture or manipulate facts to fit a theory, we are not engaged in reasoning at all, but in wishful thinking.

The fact is the non-rational beginning and goal of every rational process. We start with certain facts and we aim to discover certain facts. Reason itself may be the fact which we are desirous of relating to the rest of reality. *Fact is never dissolved in reason any more than it is crystallized out of reason.*

A syllogism may contain a perfectly correct conclusion without involving any actual facts whatever, as we have previously observed. I can say, "If devils do only evil and imps are little devils then imps do only evil." The final proposition is perfectly conclusive, though it does not commit us in any way to the actual existence of either devils or imps. It is formally correct, but not factually true. It illustrates a universal of implication. It tells nothing about any fact so implicated. Should I say, all planets revolve around the sun; the earth is a planet, therefore it revolves around the sun, I am assuming that the statement of facts is correct and therefore it is not only formally, but factually true. The knowledge of the independence of the facts from the logical casuistry by which we seek to establish some theory concerning them is present in all sane speculation. Scientific and logical objectivity is in some respects not unlike the saints' humility in the presence of God. They both entail a kind of self-surrender or selflessness towards the object of their adoration. They let themselves be *absorbed by it, not it by them.*

There is another limit to reason which tempts us sometimes to describe the world as irrational. I believe it was Thomas Carlyle who was fond of speaking of the "infinitude of nescience," which always hems us in. No matter how far knowledge may have advanced, we all stare into the opaque beyond. We shall return later to a full consideration of all that is implied by this situation. Of one thing let us be sure

—that when we speak of the finite knowledge of man in contrast, let us say, to the infinite knowledge of God, we are not comparing two magnitudes. We do not mean merely that man's brain is so small, his mind so frail, that it has not the room nor strength to acquire the knowledge which is God's. We mean something more intimately related to the essential structure of reality. If reality constitutes a transcendent whole which we identify with God, then every point of view within reality can only be a particular perspective of that whole. Our knowledge of God, insofar as it is true can, at best, be a view of the all-inclusive in the perspective of the human spirit. Eddington, in his *Philosophy of Science,*[26] seeks to develop an epistemology which he calls Selective Idealism. He bases all scientific hypothesis ultimately upon observation, but points out that no matter how acute our senses or how precise our instruments, there will always be whole areas of reality of which we know nothing simply because they contain elements which cannot be sensed or probed by our perceptive apparatus. His illustrative device is a fish net. Suppose a man comes to us with a report that there are no fish in the sea less than two inches in length. He may have spent an eternity fishing, and fished diligently in all the seven seas, and hence affirms with absolute positiveness and conviction that there is a known limit of two inches for all fish. Should you be curious, however, and examine the net, you will find the mesh so coarse that anything smaller than two inches is bound never to have been caught.

Now our sense organs and the categories of our thinking as they have been developed in the course of human life are the nets with which we go fishing in the sea of reality. What we observe is only what we are capable of observing with the instruments at our disposal—eye or brain, microscope or radar, telescope or rocket. All that science can do is to give us a description of nature in its human perspective. It is a great mistake to believe that in the history of culture the gods alone were anthropomorphic and that even on the high levels of religion, God is still made in the image of man rather than the reverse. There is some truth in the latter stricture but it does not militate against the validity of the God idea. God must always be the infinite unity of all being, as it includes man, and as it is involved in man's experience. The picture of nature which science presents, is also that of existence which includes man and as apprehended by human perception and human thought. There may be whole realms of being and order of which the human mind has not the slightest inkling.

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[26] A. S. Eddington, *The Philosophy of Physical Science* (New York: Macmillan and Co., 1939).

The Slanted Perspectives

Besides the general human perspective, each individual views the whole from the standpoint of his particular location in space and time, as well as from whatever eminence of wisdom or culture he may have attained in his life span. I look down at a tile from above and find it rectangular. I stand off a few feet and scan it obliquely and now, behold, it is diamond-shaped. It is perfectly futile to discuss whether the tile is really diamond-shaped and only appears square when viewed at right angles from the plane on which it lies, or whether it is really square and deludes us when we view it obliquely. The fact is that the same tile may under certain circumstances display one geometric universal and under other conditions quite another. Universals, you remember, may be anywhere and anywhen. This does not imply that two contradictory statements can both be true or that there is no absolute truth. If both statements, respectively, can be true of the tile relative to certain positions in space of the observer, then this spatial or geometric relativity can be affirmed as an absolute truth.

Similarly, with regard to the cultural point of view; a map of the world drawn a thousand years ago would scarcely have shown the Americas. This does not mean that the cartographer has deceived us or that he was ignorant of the world. The Americas simply were not part of the world in the learned tradition of his day. To Rand McNally such a map would not be a map of the world at all. Shall we dismiss the first, therefore, as a monument to ignorance? No, it has become a monument to the progress of exploration. It is simply the world before Columbus.

The body of human knowledge is always slanted. Insofar as it is true knowledge, within its limits, it is knowledge of fact in the perspective of some point of space or history. The sun did rise this morning, though Copernican astronomy declares otherwise. It rises each morning in the perspective of earth-bound observers. In the perspective which involves the whole solar system, I shall have to qualify any description of the sun's rising, and yet, how terrifying *if the sun had not risen* this morning!

There are other possible perspectives than those we have just been considering. We look at life and the world mostly from the point of view of our special interests. An ancient navigator doubtless knew much more about the stars than does the modern sailor whose compass and other instruments enable him to calculate direction. He was interested in stellar observation because knowledge of the stars meant life or death to him.

The special sciences and disciplines preempt such specialized areas of knowledge. Physics, chemistry, anthropology, psychology, medicine, surgery, are examples of what I have in mind. A man's attention cannot focus equally everywhere. His quest for truth is guided largely by his interest in the subject to which such truths are relevant. A man, therefore, may rightly have faith in reason, faith that everything in the universe has some relevance to every other item therein if we could but discover it, and yet know that no matter what inquiry he is pursuing, whole systems of knowledge about some facts will have to be bypassed in order that he may apply himself and his life's energies to the matter in hand.

We can never jump out of the skin of the perspective that contains us. It is like a man at sea who wishes to catch up with the horizon. There may be no artificial barrier to vision. The difficulty lies only in the fact that we have to be in two places at one time to include in one observation the horizon and what lies beyond. Some time, on some occasion, any man, or human intelligence as a whole, may penetrate what now is opaque and learn what now lies beyond—but only to discover new horizons to both lure and baffle him. In this way, it expresses no contradiction to say that the universe is essentially rational and still admit perpetual limits to human reason. There is always something we, here and now, being what we are and where we are, cannot know. There is a positive side to this situation which has some startling implications of its own for philosophy and which we shall have to examine in the course of our discussions.

The Persistence of the Demonic

I find that even sophisticated minds find it difficult to accept a world without demons even though they may be ready to deny God. I refer, of course, to metaphysical demons, not mythological ones. They would insist that since we do make judgments that are false as well as such that are true, since men do evil as well as good, may not reality contain an *essence* of *falsehood* and *evil* as an objective fact, which constantly intrudes upon our experience?

Let me begin with an example of truth and falsehood. We have already observed that facts are never true or false, or better still, that they are always true since they perpetually correspond to what they are—they are self identical. Only judgments concerning facts, their character and relevance to one another can be true or false. Error as well as truth are products of human thinking. The human mind can affirm truth, can make mistakes and can correct mistakes by clearer thinking and wider observation.

The Nature of Error

If so, we must avoid the vulgar error of supposing that a false judgment is really *a correct judgment of something false*. It is never that. It is a false judgment of some factual truth. The false statement that DeGaulle fought in the Wars of the Roses does not change the life history of DeGaulle as a contemporary Frenchman. Nor did some imp of confusion, some essence of error, falsify the facts on the pages of history and slyly convey them thus distorted into the mind of some human. To say "the sun is a large planet" is not a true affirmation of a transformed sun. It is just a false statement, born of ignorance, describing the actual sun as being what it is not. The confusion arises in the thinking of finite man. It must be attributed not to an essence of irrationality in facts, but to the essence of the human mind which is capable of both truth and error. This is due not only to the limitations imposed upon thought such as we have already described, but to the presence in the same mind of desires and imaginings which may quicken thought or divert it from its course.

The errors, the misconceptions, the hallucinations to which the mind is subject, are themselves psychological facts to be studied and analyzed. The specialist tries to study them objectively. He takes responsibility for his ignorance or his knowledge, mitigated only, if he be honest, by the sense of limitation imposed by his finiteness. He knows very well that no one can know everything of anything. He will not, however, mistake his own confusion for the confusion in his patient's mind. That confusion is precisely the fact with which his judgment is dealing with more or less success.

The essence of fallacy is the essence of perception in its finite limitations and with its limited horizons. It is defined as error and ultimately revised by the unalterable self identity of the facts. It is for this reason alone, that we can at last test our judgments and verify them or correct them. I am not speaking of what is falsified, but only what is false. Falsification, lying, deception, are not errors but vices.

The Reality of Evil

Yet, in this area, especially, it is difficult to unseat the metaphysical heir to the mythological devil. We are not, in this discussion, primarily interested in ethical theory. No matter how you explain the notion of "the good" and its origin in human experience—whether you are egotist or altruist, hedonist or utilitarian, pragmatist or vitalist, relativist or absolutist; whether you use the term conscience or super-ego—the evil is that which "the good" rejects or suppresses, as incompatible with it. It is not merely the negative of the good; it is the antagonist of the good; that which threatens and endangers it and yet it is the Good which takes the initiative and brands as *evil* the acts and cravings and yearnings and satisfactions, however good in themselves, which might destroy *the good* which the moral law and the conscience of man seeks to satisfy and establish.

No act, no satisfaction of longing or desire, bears upon it the imprint of evil. If the moral law forbids coveting one's neighbor's wife, it is not because the lady may not be wholly desirable, or because desiring her bears in itself the mark of evil. She should be both desired and desirable in the eyes of her husband. The prohibition demands the suppression of the covetous impulse because it would endanger *the larger and more inclusive body of values* involved in the sanctity of the family. The good which the institution of marriage and which the family seeks to establish demands of the individual that he do not yield to such covetousness because it is an evil.

There is no essence of evil in a diamond necklace or in possessing one. These radiant crystals are not only a proper adornment when come by honestly, but the perpetual wonder and admiration of the geologist, to whom they are brothers to the humble black coal of hearth and furnace and among the amazing wonders of nature. In our society, they have become the symbols of temptation and sin. Their possession should and often does give joy and satisfaction. When slyly taken from the shelves of some jewelry store and not paid for they make a man a thief. You remember de Maupassant's tragic short story of a woman who spent a lifetime driven by a sense of guilt to make repayment for a borrowed necklace which she lost only to be told at last that it was paste. Stealing a diamond necklace is evil because it is a breach in that pattern of behavior which, in a good society, aims to safeguard every man in the possession of what is his.

It is the quest of the good which stamps certain acts as evil and makes certain objects temptation to sin. In its isolation, the satisfaction of every desire is good. Desires, however, cannot be isolated from one another. What we *ought* to do will not always sanction what we *wish* to do. The satisfaction we here and now crave will not always satisfy our needs as members of a human fellowship or even aid in the self-fulfillment of our own personality through a long lifetime. The alternatives of good and evil are present whenever we act or exert our wills. Because, to establish the good, we must choose between alternative satisfactions, we become capable of sin.

The beast, too, is full of cravings and desires. He ruthlessly satisfies the pangs of hunger, the impulse to mate, the lust to kill what threatens him; all these as his organic constitution and his instincts or tropisms dictate. Despite these physical urges, he remains as far as we know, in his primal innocence. He has neither the imagination or the ideational power, or the will, to conceive and execute the good. His societies—the wolf pack or the beehive—retain their fixed patterns through many ages. There is no quest for the better because there is no vision of the good, and hence no moral evil complicates his life.

Yet, if the infinite whole is both the realm of creativity, as well as of essence and possibility, and if we should reach the conclusion *that this whole of being is truly God,* is He then not responsible for the evil and error in man's experience? Did He not create in man the yearning for truth and the possibility of error? Did He not endow man with vision of the good and the possibility of choosing between it and the evil which good itself evokes?

The answer I think is yes. God, the essence of all good, is also the source of evil. Did not Isaiah long ago declare, "I, the Lord, form light and create darkness, make peace and create evil." Just how this is so, and why it should be so, we may have diffidently and humbly to examine as our argument advances. At present, it is enough to exorcise the devil from our thinking. There is no separate essence of evil which enters the soul from without to corrupt its inner purity.

The Character of the Negative

In the existentialist philosophy of today, we meet also with the reification of not being or *nothingness.* "Nothingness," says Sartre, "sleeps at the heart of being." "Not being" is not alone, as with Hegel, one phase of a dialectic out of which concrete being arises. It is supposed to be the absolute state in which man finds himself.[27] The individual is suspended in nothingness and lives in nothingness, and what he is, is simply what he desires and wills to be, in the world he spins like a spider out of his own substance.

The religious existentialist invokes a God not primarily to make the world rational, or even to save man from sin, but to redeem him from nothingness. They commune with Him, but refuse to seek grounds in reason for such communion. Indeed, He cannot be an object of thought since his relation to man is strictly person to person. There is no skein of rational relationship *which necessitates the encounter and therefore requires understanding.* Yet even in the pre-philosophical stages of religious experience, the term God was thought to have some rational content. No one can make me believe that the person or *subject* with whom the prophets communed was not also the *object* of their thought, and that they were not often perplexed concerning His nature and His dealings with the world.[28] At any rate, men who seek Him today are. There are those who believe God can be *encountered* or *confronted* on paths of reason, as well as in prayer or in mystic illumination and that His ways are not only those of righteousness, but those of wisdom. In

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[27] Cf. William Barrett, *Irrational Man* (New York: Doubleday & Co., Inc., 1958), pp. 202, 216, 220.

[28] Cf. Habbakuk 1:12—2:3; Jeremiah 23:23—29.

Scripture, wisdom personified claims to be "the first of His ways." It is not intellectual pride, but intellectual humility which prompted the prayer:

> In grace hast thou endowed man with knowledge and taught him understanding. So endow us with the knowledge, understanding and reason which is thy gift. Blessed art thou, O Lord, the gracious source of all knowledge.[29]

Now, just as there is no essence of error or essence of evil, so there is no essence of nothingness—*Not Being* must not be confused with the *being of Not.* That is again popular mythology in modern dress. The not being of something is neither more nor less than the being of something else. If I point to a certain object and say this is a book, I can further define it by any number of its attributes, such as large or small, written for popular reading, published by such and such a house. Should you want further information, I might add: It is not a book of philosophy. It was not published in England. It is not one of a series of volumes. It is not short, not this, that, and the other. What it is not would require naming whatever else is in the world. It is the being of these which constitutes its not being. My relating what a thing is not does not imply that the essence of not-being has somehow entered into the thing.

The mathematical zero has its important place in thought as has the mathematical minus. When the confession escapes me that the number of houses I own is zero, I intend to state, speaking logically and mathematically, that there is a class of possible objects, "Houses I own," which has not a single actual member. It must not be taken to mean that I possess houses that have a zero quality. A house is always something and can never be equated with zero.

When my bank balance this month shows the sign minus $100, whereas last month it showed plus $100, I know at once that I have overdrawn my account and that a month ago the bank owed me $100, whereas now I owe the bank $100. The minus dollars are not essentially a different sort of dollar. They are the same substantial dollars whether the bank or I am the debtor. Subtraction is a different operation than addition, but the thing subtracted may be identical in nature with the thing added.

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[29] From the Liturgy of the Synagogue.

The importance of all this lies in the fact that "good" in its moral sense is a universal of value defining voluntary acts which bring some sort of satisfaction to the individual or society. But evil is not a universal of disvalue. It is not an essence. *An act becomes evil through the essence of the good,* which excludes it from participation in the pattern of voluntary decisions, which together provide for a larger and richer Good. The searing fires of "the good" brand it with the mark of evil.

If we are baffled in our search for truth and the world of the unknown always lies beyond the horizon of understanding, which we or our age has attained, it is not because the thread of objective rational relations has snapped, or because the essence of nothingness fills us with dread and confusion; it is because we are overwhelmed by that plenitude of being which is God. This is the "fear of God" as the thinker senses it.

In that infinite sea of reality, we are all, even in our togetherness, tiny islands and our brightest beacons shine but as murky candlelight. The unknown is not the essentially unknowable. There is no "geist der stets verneint" in the structure of the real. The mind both affirms and negates, but it does not ascribe *negativeness* to anything, to any of the crucial experiences of life, such as pain, sorrow, sin, or ignorance. They are hailed as the great antagonists and in the name of reason and right, the normal person girds himself to do battle against them. When a man says, "I believe in no God," he is not affirming faith in a no-God. He is simply denying that the word God refers to a real being. He denies the truth of the judgment there is a God. The attempt to reify error, evil, and not-being, have always been recurring stumbling blocks to philosophical thinking.

Purpose, Accident and Chance

To return to our point of departure! It is not enough to speak of the infinite whole of being, as embracing first, actual entities—particular things and natural processes in the space-time continuum—and secondly, the universals (of quality and order) which constitute their essence and lead to their definition; and thirdly, that non-temporal creativity by virtue of which actualities are made possible and certain possibilities and essence become actual—all this is not enough to equate the infinite with the idea of God.

Indeed, the first impulse of one not strongly influenced by religious tradition, or one impatient of deductive thought, is to shrug his shoulders and say, "May not all this be a huge and inexplicable accident?" "Is there any meaning or purpose to it all?" We must, therefore, take pains to define purpose, accident and chance more carefully than we have heretofore done. It may be as dogmatic to say everything is mere accident as it is to say everything has a purpose. We, therefore, begin with the admission that within human experience, purpose and accident both play their part.

We know fairly well what we mean by purpose. It is striving for a goal. It is directing the conscious will to some end which we already had in mind when we began our effort. It is felt, not merely as the consequence of antecedent forces impinging upon us from without, but as motivated by some subsequent good envisaged in the present and requiring our decision for its fulfillment. Experiences such as these make life purposeful.

On the other hand, events do just happen, we know not why or how. At times they prove fortunate; a man discovers oil in his backyard. There are strange coincidences recounted everywhere too numerous to mention and too familiar to require illustration. There are dreadful misfortunes of all kinds which happen to others and may befall us. The daily papers are full of such accidents. Unplanned and unforeseen disasters occur on land and sea and in the air.

Let us describe one of the latter. Two men are bent on the fulfillment of their respective purposes. The one wishes to cross the street that he may greet a friend and the other to drive to his destination at the airport. The latter miscalculates his speed and the other fails to notice the oncoming car. Though it was not "A's" purpose to commit suicide or "B's" to commit murder, "A," by accident, is dead. It seems to us as the meaningless frustration of the purposes entertained by "A" and "B." We describe it as a sheer accident. In this way, every accident, for good or ill, is some event which does not originate *in any purpose we are entertaining or any purpose known to us.* We may not legitimately conclude from the fact that, in the perspective of our experience, an event appears to be accidental, it fulfills no purpose whatsoever.

Should the event described above come to the attention of somebody in the public safety department, he might account for it quite differently. The words "purpose" or "accident" would play but a minor part in his description. He tells us, "I could have foreseen that this was bound to occur. "B" never obeys the traffic laws and "A" is so absentminded he never observes the crossing signals. Had I known the purpose they were engaged in and at what rate of speed these purposes were being executed, I could have figured out mathematically at just what point "A" would inevitably be killed."

What was an accident in the perspective of the joint purposes of "A" and "B" is not an accident in the perspective of the statistician. It was something which *had to be* and was *predetermined* by the habits of "A" and "B" and the circumstance of their position relative to one another. Now, what the engineer has said about the accident in question, and what paradoxically we often say in a fatalistic mood of almost any occurrence, "It was bound to be," is precisely what the classical materialist (in the period of classical physics) said of every event: nothing is an accident, nothing the fulfillment of a voluntary purpose. Accident and purpose are both illusions. Nature is the blind weaving of a fate.

The student of nature who was also a naïve believer in

God was not greatly dismayed by this seeming determinism in nature. To him, it was all preordained by the purpose and will of God, who was a being apart from nature. He created every bit of nature and gave it its position and momentum. He, the Creator, is the first cause, the prime mover of all things. Nor would this view of nature lead him to deny freedom of will as Spinoza denied it. He simply did not count the soul of man as a natural phenomenon. It was something which God had placed within the human body, a part of His spirit which God had created as an immortal and supernatural being to be united for a short time with the flesh. To the atheist in this epoch of thought, accident is absolute and purpose an illusion. To the believer, purpose was ultimate, but real only in the supernatural sense.

Neither of these alternatives is open to us, if we include within nature and natural processes the evolution of life and the nature and history of man. Nature is always natural. Within the space-time continuum, there is no gap to be filled in by the supernatural. The creativity of God is immanent in nature and throughout nature, not related to it as a force from without or manifest at any point of space or time. It is eternally at work in all space and time, in its specific as well as its generic aspects. It brings into existence all concrete things and is the ground of all universals defining their essence.

Chance differs somewhat from both purpose and accident in its deterministic and fatalistic sense. Let us toy for a moment with the idea of chance as the ultimate ground of all existence. Nothing which man devises for purposes of amusing himself with games of chance really involves pure uncontrolled chance. The six sides of the dice, or the numbers and figures on the cards would enable a mathematician to figure out exactly what the chances are in any series of throws or deals, of the six showing up in the dice, or the straight flush in the poker game. The degree of chance, strangely enough, is determined by the rules of the game, the characters of the counters employed and the *purpose* to derive a thrill out of the throw of the dice. If the cards should remain undealt, there would be no chance at all of the straight flush turning up in anyone's hand. If apes, in meaningless play, shuffled the cards again and again, there would be a chance of the straight flush turning up. The result would then no longer be pure chance, but something determined, or brought into being by the playfulness of the apes. Here, then, we have chance limited by the conditions under which chance is evoked.

No wonder that Einstein could say with regard to the principle of indeterminism in physics, that he does not believe that God is playing dice with the world.[30] The concept of chance as final or absolute, is one he found it hard to swallow. It is, in essence, self-contradictory. If the existence of life and the non-existence of life had an equal chance in the nature of things (neither was necessarily determined), how came the dice to be loaded in favor of life? Ah, you will say, they were not loaded. Life just turned up by chance. Very well, then, *someone* or *some power must have rolled the dice to give life a chance to turn up.*

It was considerations somewhat like these which forced Aristotle to posit God as the Prime Mover. The primal matter had to be set in motion for anything to turn up which was not already there at the beginning. When contradictories are equally possible, nothing can become actual save by some decision among them. You cannot counter by saying the decision was made by chance, because if decision, conscious or not, is ultimate, the course of nature is determined and not based on random movements alone. If it is not ultimate, you let yourself in for infinite regression in which chance and decision replace one another without end. No chance without previous decision, no decision save by chance!

Let us, for a moment, dispense with such metaphysical terms as *ultimate* and creativity, and confine ourselves to the elemental units of electrons and quanta to which modern physics ascribes a certain random or indeterminate behavior which smacks of chance rather than causal law. The quantum or corpuscle of energy is such that it is impossible, say the physicists, to assign to this elemental unit both velocity and location, and therefore, to foresee what it will do or where it will be at any particular instant. This frustration is not due to the crudeness of our sensory perception or the clumsiness of our measuring apparatus. It is due to the fact that a beam of light which sought to illumine it in isolation, or any instrument which would probe it, would simply find it not there. Since it has no exact location, when in motion, you cannot direct either the beam or the probe to where it is sure to be observed and should you observe it, it would have no definite velocity upon which to base a prediction (it would already be at rest).

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[30] Lincoln Kinnear Barnett, *The Universe and Dr. Einstein With a Forward by Albert Einstein* (New York: W. Sloane Associates, 1948), p. 29.

H. J. Muller, the geneticist, whom we shall later quote in support of our general position with regard to freedom and responsibility is at pains to warn philosophers and theologians against trespassing on the field of recondite physical theory in order to reintroduce the mysterious faculty which used to be called "free will," as though the will were something supernatural or at least apart from the other faculties of natural man. "Actually," he explains, "this (indeterminism) has nothing to say about consciousness or will, but only concludes that it is not possible, at least by present means, to ascertain both the exact motion and position of an extremely small particle at a given instant since we interfere with its motion and/or position in the very act of measuring them. Operationally, then, *we are not even justified in concluding that it has a precise motion and position.*" [31] (The emphasis is mine. J. K.)

This statement seems to me quite amazing. The operational difficulty makes it impossible, in the basic constituents of the atom which enter into all physical things, to state unequivocally that one situation is completely predictable by the observation of some previous situation. Is there any reason then, to believe that should this "operational difficulty" be overcome, we shall not, in overcoming it, discover units of matter-energy still more minute than those with which we now deal and with regard to which the operational difficulty will again baffle us? The trend of discovery has been all in that direction.

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[31] H. J. Muller, "The Meaning of Freedom," *Bulletin of the Atomic Scientists,* Vol. XVI, No. 8 (October 1960).

No one has disputed the statement that the overall effect of these innumerable unpredictable random movements can be foreseen with a great degree of probability. They do enter into self-conscious organic masses of living tissue as into inert objects. In the former they may be so organized as to fuse into the conscious feeling that the self initiates action as well as suffers and transmits it.

Out of the random behavior on the part of myriads of infinitesimal units, scientists can derive, by statistical calculation, the laws of nature which govern large material masses. They are the objects with which we have practical dealing. They are compounded, even the smallest of them, of many atoms and molecules. All this is due to the fact, as the more articulate scientists explain it, that matter or energy are both corpuscular and wave-like and that the mathematics of the wave can determine within what limits of space the individual quantum will have its abode and come to rest. It is often defined as a wave of probability.

Here, then, we are concerned with an infinite number of accidents which somehow become purposive and on which are based the laws of nature. They crystallize into the cosmic environment in which the human spirit struggles for survival. They enter, therefore, into the natural history of human purpose and aspiration. They become the means through knowledge of which man learns to master himself and nature and, in part, free himself from subjection to them. They operate, it must be remembered, in the brain and nervous system of man, as well as in the starry galaxies. These random indeterminate movements of material units, through his living flesh, are marshalled to serve his purpose.

We know that man has often fallen to earth as he has sought to climb, both physically and spiritually. Yet, even now, he entertains the purpose to rise above the gravitational pull of the earth itself, to which all material things in his environment are shackled. The thing to remember is this—that matter does display an element of chance, but chance limited by the laws of wave mechanics.

This question of the wave and corpuscle, of determinism, purpose and chance, the writer of these lines has more fully discussed in the third chapter of *The Moral Life of Man*. Let me here again quote the statement most clearly relating it to our conception of God.

> Thus we confront a bifurcation of the roads which try to interpret the world meaningfully. Is there a dividing principle at the foundation of the world? Or is the arbitrary element the aspect of chance, included in the *self willedness* of finite beings who nevertheless are under meaningful direction.[32]

When we call to mind Einstein's disbelief in God playing dice with the universe, we can understand the above statement more thoroughly. Much more recently, Feibleman in his *Ontology* defines chance as "without cause," or alternately, as the "*self-determined* and *self-caused*." Creation, we must always remember, is not a cause. The causal link is one feature of the created. A thing may be created and yet, within certain limits imposed by other creatures, its behavior may appear random and spontaneous. From their togetherness in the creative process, their interaction and reaction in respect to one another, emerge causal law and ultimately human purpose and the moral will.

We are always tempted, when we meet with difficult paradoxes, to shake them both off. Why cannot we admit that the concepts purpose, accident and chance, when we take either of them as *absolute*, the fundamental, make no sense. Can we not avoid the subtle, but disturbing dilemma, by simply accepting the fact that accidental or chance events, seemingly meaningless, will find themselves side by side with such as are purposeful and significant and leave it at that.

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[32] Aloys Wenzl, "Einstein's Theory of Relativity Viewed from the Standpoint of Critical Realism and its Significance for Philosophy," *Albert Einstein, Philosopher-Scientist* (Evanston: Illinois Library of Living Philosophers, 1949), p. 190.

There is a strong tendency today to seek philosophical peace of mind by abandoning the search for the ultimate. This, I believe, is a begging of the metaphysical question and a futile one at that. The inquiring mind of man will not have its intellectual anxieties so easily allayed. Purpose, and on the other hand, accident or chance, as the predetermined or the undetermined, define one another in their interrelatedness. The personality of man is only the highest and most complex instance known to us as God's self-revelation in creativity.

We had better begin with man and work backwards. We know, each one of us, that we are both bound and free; that unaccountable events happen to us and within us and we must take the possibility of their happening into account and plan accordingly. We cannot be other than we are, but what we are we shall never know until after we have acted for good or ill and the last chapter of our life is closed. Nothing could have caused us to be as we are, choosing between alternatives of good or evil, unless, nascent in the entire chain of causation in which each being is involved, there broods the creative freedom of God bound by nothing but himself.

PART II—PROCESS

Chapter VI

COSMIC PROCESS

The Cosmic Process and Antique Skepticism

We come now to the whole chain of causation, or rather to the whole causal network in which each concrete entity is involved. Whatever may be the degree of self-determining spontaneity inherent in any individual elemental unit according to its nature, its action must suffer certain necessary limitations. Everything acts upon something else and reacts to something impinging upon it. Everything is affected by some other entity and affects the other in return. They present, in so doing, certain patterns of behavior which we commonly call natural law.

These do not tell us how things act or even how they react, but how they interact in certain areas of existence. They enable us to predict how one physical situation will most probably follow from the other. If there were no such laws, the matter-energy units would simply act to frustrate one another.

No analogy is exact, yet it would help us considerably, to bear in mind, that only traffic laws can keep traffic moving in congested areas and prevent a complete standstill. Similarly, natural laws keep the physical universe moving. We know very well that what enables the automobile to advance at all is the power hidden under the hood. So are we convinced today that there is something self-acting and self-directing in each drop of matter-energy, and yet in their togetherness, they must find some common paths and organized direction. This overall direction we call cosmic process or cosmic evolution.

The physical universe is important to philosophy for this simple reason—that whatever we may conclude concerning the character of universals or of essences or even of God, must derive from an experience and examination of nature. We have no other source of knowledge. Introspection is only the self, observing its own nature. If nature should turn out to be God's self-revelation, it is only the study of nature which can convince us that this may be the fact. Revelation as a psychological experience, or for that matter, the God idea itself, is contained within nature. Man, and his history, cannot be excluded from that natural history which includes the story of all living things.

Aren't you forgetting, someone may remind us, that man has a mind? This would only prove that some physical organisms are minded organisms—perhaps all are in some degree. Spinoza, himself, is forced to the following interesting assertion.

> The propositions we have advanced hitherto have been entirely general applying not more to man than to other things, *all of which, though in different degrees* are animated (animata which Wolfson translates "besouled"). For of everything there is necessarily an idea in God of which God is the cause in the same way in which there is an idea of the human body . . . wherefore in order to determine wherein the *human* mind differs from other things and wherein it surpasses them, it is necessary to know the human body.[33]

The latter observation simply affirms that you cannot insert your mind into any other, human or subhuman. You can only observe the behavior of the body, the mind of which you are studying. The paws may be employed in climbing a tree or the hands may be writing a book.

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[33] Benedict Spinoza, Ethics, Vol. I, Part II, prop. 13, note. R. H. M. Elwes translation *The Chief Works of Benedict de Spinoza* (New York: Dover Publications Inc., 1951).

At any rate, all human knowing is a psychological fact within the larger cosmic process and the physical universe is first of all the scene and the source of man's knowing—whatever he may get to know. This is our speculative interest in the cosmos as such—not that we know nature, except in a very limited degree but that it is *in our nature that we know or want or get to know.*

Men, I suppose, always realized, at least as soon as they had a word for the world or the universe or even the joint being of heaven and earth, that this world in which they lived was neither all of it at rest, nor all of it in motion, that it was not all flux and flow, nor was everything fixed and static. The poets would pay tribute in many languages to "the eternal stars," to "the everlasting hills," to "the foundations of the earth." They sang likewise of the succession of day and night, the sequence of the seasons, the restless blowing of winds, the flow of rivers, the movement of the constellations and all the more obvious regularities of the environmental scene. All this, even at a period when they were still creating myths of gods and demi-gods, or the wonders of miraculous intervention were still being evoked to embellish the ancestral story or to magnify the glory of God over the works of His Hands!

When first, however, the concept of nature, as such, was firmly established involving the necessary interdependence of events one upon another, the dominant cosmic movements were still thought to be cyclical. Man and the earth upon which he stood were conceived by the antique mind as the center about which in successive spheres, revolved the pageantry of the heavens. Even the Stoics believed that the world with its immanent god, the celestial fire, was doomed to be consumed and reborn again in repeated cosmic rhythm.[34]

This view that the dominant changes in nature with their effects on human destiny were mainly rhythmic and recurrent led to a type of speculative pessimism different from that which confronts us in modern humanism. The latter sees in mankind a heroic figure begotten of chance, sustained by forces utterly indifferent to and unaware of his purposes and goals, and doomed at last to defeat, by the dark chaos out of which he had accidentally emerged. The first type of speculative pessimism which I have called the antique type, is best illustrated in the introduction to Ecclesiastes:

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[34] Wolfson, *op. cit.*, pp. 139, 295, 299-300, 370, 326 note 3.

> Vanity of vanities saith Koheleth.
> Vanity of vanities, all is vanity.
> What profit hath man of all his labor?
> Wherein he laboreth under the sun?
> One generation passeth away and another
> generation cometh
> And the earth abideth forever.
> The sun also ariseth and the sun goeth down.
> And hasteth to the place where he ariseth.
> The wind goeth towards the south,
> And turneth about to the north;
> It turneth about continually in its circuit.
> And the wind returneth again to its circuits.
> All the rivers run into the sea;
> Yet the sea is not full;
> Unto the place whither the rivers go, thither
> they go again.
> All things turn to weariness;
> Man cannot utter it,
> The eye is not satisfied with seeing,
> Nor the ear filled with hearing.
> That which hath been is that which shall be,
> and that which hath been done is that which
> shall be done,
> And there is nothing new under the sun.

The sense of futility sinks into one's bones. We are destined forever to sit in the center of a cosmic carousel. The fundamental malaise is not really healed by the author's bidding us to enjoy life as it is, while we can, or even by the thought often expressed in the book that God doubtless made the world what it is. The several pietistic exhortations (whether they be later interpolations or not), have the taste of the conventional advice usually given by the old to restless youth or by the privileged to the common folk, to wit—it is always wisest to accept the established order in heaven or on earth.

We must be forever grateful for that religious genius which gave to this beautiful book with its pity and its pathos and its melancholy splendor, a place among the Scriptural classics and for the intellectual energy which later went into the subtle, but artificial attempts to harmonize it with the high demand of triumphant faith. The book will forever speak for itself.

We may also recall certain lines from Omar Khayyam reflecting a similar mood. These quatrains are now rather frayed from much usage. Seeing that a century has just elapsed since first Fitzgerald's great translation of the Rubaiyat made its appearance, we may be forgiven for recalling them. They reflect Edgar Fitzgerald's agnosticism as well as Omar Khayyam's melancholy:

> "Myself when young would eagerly frequent
> Doctor and Saint, and heard great argument,
> About it and about; but ever more
> Came out by the same door as in I went."

or again,

> "Into the universe and why not knowing
> Nor whence like water willy nilly flowing;
> And out of it, as wind along the waste
> I know not whither willy nilly blowing."

The Cosmic Process and Modern Skepticism

We, today, draw quite a different picture of nature whatever be our temperamental reaction. All these motions, swirling, circular and cyclical, are but eddies. They are insignificant vortices in the onrushing stream of life and existence. The galaxies and constellations were once mere nebulae or globe of hot gaseous vapor. Out of these emerged the stars and planets, and the teeming variegated creatures which constitute life and its far flung environment.

There is always *something new under the sun.* Today and all that exists today differs from all the yesterdays that have gone before. The sun, itself, has changed in the unimagined aeons of its existence—an estimated forty-eight billion years. Much of its heat has been lost in radiation. What there now is of life on the globe or some other globe is possessed of its present form and nature because of all the forces which, in time past, have shaped and molded it. We know that tomorrow is being forged into something new, within us and among us and about us, by the forces, physical, vital and social that are operating today. Nothing old under the sun or in the sun: no creature and no epoch exactly like the other in the stars or in the history of man! The continuity of change, the realization that only *transience endures* has led to a new kind of pessimism.

It takes the form of a cosmic pessimism wed to a sort of *humanistic narcissism.* Man is expected to applaud Man. He is the spectator as well as the pathetic hero of a world tragedy. His ultimate satisfaction lies in applauding himself as he goes down bravely with the wreckage of his hopes into darkness and everlasting night—his reason, his dreams, his will extinguished in nothingness.

The most persuasive and noblest expression of such a mood has, I think, been penned by Bertrand Russell in his essay on "A Free Man's Worship," which once appeared in the collection "Essays in Logic and Mysticism," and more recently, somewhat revised, in his book *Why I am not a Christian.* In *The Moral Life of Man,*[35] I had occasion to quote some passages from this moving essay.

Let me here present another instance of this apotheosis of man as he emerges, develops, and for a brief period survives in an environment which is itself indifferent to his fate. This fervent humanist hymn to the sad glory of man is from Thomas Wolfe's great novel *You Can't Go Home Again.*

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[35] Kohn, op. cit., p. 234.

> This is man, and one wonders why he wants to live at all. A third of his life is lost and deadened under sleep; another third is given to a sterile labor; a sixth is spent in all his comings, in the moil and shuffle of the streets, in thrusting, shoving, pawing. How much of him is left, then, for a vision of the tragic stars? How much of him is left to look upon the everlasting earth? How much of him is left for glory and the making of great songs? A few snatched moments only from the barren glut and suck of living.
>
> Here, then, is man, this moth of time, this dupe of brevity and numbered hours, this travesty of waste and sterile breath. Yet if the gods could come here to a desolate, deserted earth where only the ruin of man's cities remained, where only a few marks and carvings of his hand were legible upon his broken tablets, where only a wheel lay rusting in the desert sand, a cry would burst out of their hearts and they would say: "He lived, and he was here!"
>
> Behold his works:
>
> He needed speech to ask for bread—and he had Christ! He needed songs to sing in battle—and he had Homer! He needed words to curse his enemies—and he had Dante, he had Voltaire, he had Swift! He needed cloth to cover up his hairless, puny flesh against the seasons—and he wove the robes of Solomon, he made the garments of great kings, he made the samite for the young knights! He needed walls and a roof to shelter him—and he made Blois! He needed a temple to propitiate his God—and he made Chartres and Fountains Abbey! He was born to

> creep upon the earth—and he made great wheels, he sent great engines thundering down the rails, he launched great wings into the air, he put great ships upon the angry sea!
>
> Plagues wasted him, and cruel wars destroyed his strongest sons, but fire, flood, and famine could not quench him. No, nor the inexorable grave—his sons leaped shouting from his dying loins. The shaggy bison with his thews of thunder died upon the plains; the fabled mammoths of the unrecorded ages are vast scaffoldings of dry, insensate loam; the panthers have learned caution and move carefully among tall grasses to the water hole; and man lives on amid the senseless nihilism of the universe.[36]

This as far as we are concerned is the key phrase—the senseless nihilism of nature. Such a mood, wherever it finds expression, takes for granted that nature is the dark and murky back-drop against which man tells his tale and enacts his grim, but glorious fate; that one phase of his split personality—his reason and powers of observation, the eternal spectator within him, who all along knows the only possible ending of the story—is doomed to see it through with mingled feelings of pride and compassion. Actor and audience both enter the theater for no reason, from nowhere, and depart to nowhere for no reason, for they are one and the same.

Such a world-view assumes likewise that man is cast by fate or chance in a certain definite role. It might just be that mankind wearing different masks in many climes and ages is at least co-author of the play in which he appears as actor and observer. Perhaps the closing lines have not yet been written and the script will remain unfinished while anyone is left in the theater to laugh or weep.

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[36] Thomas Wolfe, *You Can't Go Home Again* (New York: Harper and Brothers, 1940), p. 435.

A More Hopeful Note

The place of man as the director of the evolutionary process which contains him, was only recently emphasized by Julian Huxley in connection with the one hundredth anniversary of *The Origin of Species.* He calls our present era the humanist era. "It is the era," he says, "in which the evolutionary process, in the person of man, is becoming purposeful and conscious of itself. . . . Life has been evolving on the earth for over two billion years. Manlike creatures have existed for only about one million years [37] and human civilization with all its achievements for a bare five thousand years. But evolving man can reasonably expect an immensity of future time—another two thousand million more," unless, Huxley warns, "man destroys himself by nuclear war or other follies." [38] "Thus," he concludes, "the new vision we owe to science is one of real though tempered optimism. It gives us a measure of significance and rational hope in a world which appeared irrational and meaningless." "It shows us man's place and role in the universe. He is the earth's reservoir of evolutionary possibility: the servant of evolution but at the same time its youthful master. His destiny is to pursue greater fulfillment through a better ordering of the psychosocial process. This is his extraordinary privilege and also his supreme duty." [39]

Huxley proceeds cautiously. He does not affirm the "senseless nihilism" of the universe. He speaks only of a world which *appears* irrational and meaningless. The ambiguity of such a position is exposed in the opening paragraphs of the essay on "The Future of Man." He speaks of the present era as the one in which the *evolutionary* process in the person of man, is becoming *conscious of itself.* He also adds "The universe of nature in which man lives is now revealed as a single process of evolution, vast in its scale of space and time. Man is part of this universal evolving world stuff. He is made of the same matter, operated by the same energies as all the stars in all the galaxies." [40] If the process of evolution *is one and continuous,* and rational purposive man is the apex and culmination of that process, then emphasis must be placed upon the fact that in our experience at least, the mind of man is not merely an accidental flash against the blind opacity of nature, but that at last nature reveals its essential meaning and purpose in the mind and spirit and soul and story of man. It is not logically legitimate to speak at one moment as though nature were a whole which expresses itself consciously, rationally and purposefully in the being of man, and the next moment to speak of it as utterly detached and indifferent to man's dreams and aspirations, to his failures and his achievements. We may analyze the whole as consisting of several stages or levels of being, but we dare not impute to the objects of our analysis that separate and detached character, which might have been theirs, were they never the phases of one's process. Water is wet whatever may be the feel of the gaseous atoms a water molecule yields through analysis.

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[37] The figures, I note, have since been revised to 1.75 million years. The skull of Zinjanthropus, discovered by Dr. and Mrs. L. S. B. Leakey in Tanganyika, was dated by Drs. Evernden and Curtis employing the atomic clock. This means, according to my untrained understanding, the state of disintegration of the stuff in which it was embedded. An account of this appeared in the press in July 1961.

[38] Julian Huxley, "The Future of Man," *Bulletin of the Atomic Scientists,* Vol. XV, No. 10 (December 1959). The Bulletin states that this article was originally delivered as one of a series of presentations on "The Future of Science" at the Day of Science at the Brussels Exposition.

[39] Ibid.

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[40] Ibid.

Chapter VII

THE THREE LEVELS OF BEING

First Level in the Evolution of Life—The Inorganic

What are the main distinguishing levels through which the evolutionary process has passed in the becoming and emergence of man? *There is first of all the great realm of the inorganic.* Before thought, before life, before earth, were the whirling nebulae or the cosmic explosion (take your choice). Then, the radiant and incandescent stars and galaxies, and the revolving planets; the earth spewing forth mountains from its molten depth, the crust slowly taking shape with much shifting and quaking and gradual cooling, the seas, the rivers, the drenching rains shaping the continents, chiseling tortuous pathways through flint and granite —this and much more constitutes the magnificent realm of physics, chemistry, astronomy and geology. It constitutes everywhere, in its most primitive aspects, a scene utterly without fauna and flora.

We call it wondrous and magnificent, an era of power and beauty vanished forever. And yet, was it a vision, did it have wonder and magnificence, with no eye to see, no voice even in lair or jungle or open plain, in the air or in the sea, to shout a call of love or triumph? It became wondrous only to the singers and scientists and scribblers of ages then unborn who reconstruct it all, as best they can in thought or imagination.

It answers one demand, however—this world of the inorganic—a demand often voiced in petulant criticism of God by those not ready to accept Him. If God is creative love and wisdom and power, why did He not produce a world immune to pain and evil, free from suffering and sin, instead of this tortured and tormented writhing we call life and history?

The only answer I can think of is that *He did, and this is it.* The forces of nature in their pristine strength ruled untamed before life appeared. They fulfilled the laws of their being, unaware of their destiny, without hope or despair. They could hurt nothing at all and they could please nothing at all, neither themselves nor others.

At this stage of the evolutionary process, it is as though God stoops to the demands of his critics. Take this senseless thing which forever excludes your very being, I imagine His saying, where nothing can bring sorrow because nothing can bring joy, but under these circumstances it shall never be said of me "and God saw everything which he had made and behold it was very good." A world immune to pleasure and pain is a world of death, not of life. Life will, of necessity, have to lose this immunity.

Of course, what we have been describing, the world of matter and energy, of inorganic shapes and powers, is not the real world of nature. It is only one stage through which the cosmic process passes. Then a miracle occurs. The chemistry and dynamics of heat and light and dust and moisture combine somehow to create life. Protoplasm makes its appearance. It is a miracle in the sense that no possible observer could have predicted its emergence. Every possible observer, you must remember, is part of the miracle.

Let us not again succumb to the temptation to which sophisticated materialism is so prone and ask, "Why call it a miracle? May it not have happened by chance?" If a chance happening is an *uncaused happening,* then a chance event in nature is as unthinkable as a supernatural one. If the whole of nature, including causation, came into existence *uncaused* and there is no reality beyond existence, then nature came by chance out of nothing. This is certainly as baffling a miracle as nature created out of nothing by a Creator.

If, on the other hand, we mean by chance not the uncaused but the *self caused,* then we impute to nature as a whole, some sort of spontaneous selfhood beyond the forms and forces which present themselves as objects of our scientific study—*a spontaneity immanent in all existence of whatever kind* from the atom outward. This creative spontaneity, always making the actual possible and the possible actual is *Reality in its infinite wholeness or what I call God.* We cannot emphasize too often that creation is not the cause of anything, it is the rational ground and source of all that is possible or actual, entity and process. That anything should exist at all is the ultimate miracle with which nature confronts us.

Even conceding all this, our statement concerning the appearance of life, someone might object, still smacks of a poetic nature-mysticism rather than of scientific description. What has really happened is that living organisms have appeared here and there on some insignificant planet or planets but that the vast sweep of galactic space still remains blind and insensitive. There has been no general transformation from death to life as far as we know.

We, however, must insist on the contrary. *No part of the universe, once life has appeared, can be described in terms of what once it was.* Every item therein is now either a living being or the cosmic environment of living organisms, or both of these, and life itself is nothing else than the dialectic between them. The environment of the slightest protoplasmic cell is not only the whole organism in which it finds itself, not alone the crust of the planet upon which life flourishes, not only the light and heat of the sun, but all the radiant penetration from remote stars and the whole space-time framework of the physical world, of which it too is a building block, and by which it measures its own duration and extension. The moment life appears *anywhere,* the physical universe becomes that communion between organism and environment, upon which the whole of life's history depends.

Even the manipulation and transformation of the world's physical structure did not begin with man—the hunter, the shepherd, the tiller of the soil, or the modern engineer with all his techniques—it began with the humblest form of living creature. Life took from its environment the nourishment it required. It made the environment in part internal to itself and no longer merely environmental. In return, it contributes its excreta and finally itself, in perishing, to the matter which had been its environment and thus makes itself internal to the substance which had nourished it during life. Bacteria readied the soil for the plough, the fertile soil did not precede life, life made earth fertile.

Life reproduced itself when circumstances were favorable but it produced itself with strange mutations and variations some of which the environment doomed to failure and extinction, others of which it selected for development and survival. Thus, according to Darwin, arose the species of fauna and flora which now populates the earth, including man.

The Second Level of Being—Sensitivity

One of these strange variants not characteristic of plant life or of the lower forms of living tissue is that tragic gift accompanying the nascent self-consciousness of the more highly developed animals—the gift of experiencing both pleasure and pain. That innocent beasts do suffer, civilized man ought to know. The suffering of all living things is perhaps the chief of these dark realities which, according to Wieman, we dare not evade because their evasion is not merely an error but a sin. Animals suffer hunger and thirst and the laceration of the flesh, they become victims of natural disaster such as fire and flood, they cry with fear and terror and anguish as does man.

They enjoy also the ecstacies of the flesh, they chirp and croak and sing and roar with the joys of mating. They know the pleasures of hunger appeased as they gorge themselves after the kill. They seek the comfort of snug warmth in lair or den or in gentler climes through seasonal migrations. All this is part of the dialectic between life and environment. Its characteristic expression, at this stage, is the pleasure-pain reaction.

The main property of protoplasm is sometimes unpleasantly described as irritability. A living organism will rid itself of some foreign substance which it cannot absorb or some painful local condition by writhings and contortions through the whole organism. If a man has an itch in his big toe, he is likely to double up his whole body and use his forefinger to scratch. A fly alights on a horse's hide and his muscles twitch, his tail lashes out, his majestic neck bends that he may reach it with his teeth. In all the *higher* forms of life, this irritability is accompanied by the *pleasure-pain reaction.* The behavior patterns which make for survival bring pleasure and are, therefore, wooed by the animal. They become factors in determining his fitness to survive under the circumstances and in the surroundings in which he finds himself. Pleasure and pain are signals which the organism must heed in the traffic of life.

If all acts and conditions of life brought only pleasure, if dying were as agreeable as living, if being eaten was as much fun as eating, if sterility were as satisfying as mating, the survival of life would have ceased long before man came upon the scene. A living world immune to pain is as unthinkable as a living world immune to life and the demand for it equally irrational. The inability to suffer is the mark of dead matter.

The religions which promise immortal bliss regard that bliss as the reward of self-denial, the compensation for pain endured or of compassion for the suffering of others. It is just because life is not immune to pain that paradise becomes in naïve religion the promise of ultimate justice.

Even Infinite Wisdom cannot answer a question that has no meaning even for the questioner himself. To be an animal (no longer among the humblest types of living things) means, in the last analysis, the possibility of experiencing both joy and sorrow.

Perhaps our imaginary skeptic will retreat from his first position and will concede that if life has value, if living tissue with its still unplumbed possibilities be more wondrous than the finest crystal, more significant than the inorganic vastness that can bring neither pleasure nor pain to anything, then perhaps the cosmic process to this point may indeed be consonant with creative wisdom and goodness; something it may be hard for us to understand but which it would be arbitrary to deny offhand.

He may, nevertheless, persist that there is *evil* in the world which is not equated with pain. Goodness may strive to ameliorate pain. The good man sympathizes not only with his fellow man but with his fellow creature, the beast. Why did not God, Omnipotent and Holy, create a world *free of moral evil, immune to sin and guilt?*

The Third Level—The Dawn of Conscience

The answer again is, *He did.* The whole world of living creatures save only the species man and the society of man and the history of man, constitutes such a world. If but we could abstract man from the cosmic process, a logical error against which Julian Huxley so emphatically warns us, we might reverently say, "How good is the world, it has no taint of malevolence despite its fierce joys and its agonies. Even the ferocious beast is innocent." Yet I fear that God would still withhold His comment "very good" concerning such a world. For how could anything be ethically good, how could mercy and justice and truth have the slightest moral value if their opposites were forever impossible to man *and every slightest action were eternally frozen into rigid inevitability?*

The agonizing question, "Lord what is man?" has been wrung from man's perplexing self-examination again and again. If the psalmist comforts himself with the assurance, "yet Thou hast made him little lower than the angels," post-biblical Jewish thought here and there voices a more arrogant but more discerning distinction "Thou hast made him higher than the angels." For these latter could neither suffer temptation nor yield to sin. They are servitors who cannot do other than fulfill their destiny. Man alone can refuse to do God's will. *Man is unique in that he can sin.* He is within the limits of his finite humanity free and, therefore, responsible.

The inorganic world is governed by blind forces and patterns which the physical sciences make the object of their study. The reptiles, the insects, the birds, the beasts of jungle and barnyard are driven by their compulsive tropisms and instincts, controlled only in part by the pains they suffer and the pleasures they seek, to eat, to mate, to form the ultimate societies of swarm and hive and flock and lair and den, which apparently remain static through long ages. These sometimes eliminate the unfit but never punish rebels for there can be none. Where there is no idea of the good, there can be no attempt at the better. It requires mind with reason and imagination to plan change and initiate revolution. Who has not heard the cliche "oh to be as free as a bird"? The flight of birds is as compulsive and instinctive as any other animal activity. The eagle never looks up no matter how high it flies, it searches the earth for prey. The birds migrate in spring and autumn and normally they can no more refuse to lift their wings in mass migration than they can keep from feeding their young.

In this mechanical and compulsive universe and by means of it, man then makes his appearance. He is the only being who can deliberately plan his own degradation and extinction as he can plan his own redemption and salvation.

Even men who do not hesitate to speak of the God-idea as the higher superstition, nevertheless unite in what, to my mind, is the foundation of the God-idea as revealed in the evolutionary process. They admit that evolution cannot be explained solely by chance mutations, but that there is an adaptive as well as a random element in the origin as in the development of species. One scientist tells us "the origin of such an organ as an eye for example entirely at random seems almost infinitely improbable." Furthermore, "the theory that the direction of evolution is fully controlled by mutation simply cannot be true," and again, "adaptation and the *apparent* purposefulness of evolution are basic problems that a successful theory *must* solve." The writer of the above lines does not solve the problem on a theological basis as we seek to do. We are asked to be content with the paradox "the evolutionary process is not moral—the word is simply irrelevant in that connection—but it has finally produced a moral animal. Conspicuous among his moral attributes is a sense of responsibility which is probably felt in some way and to some degree by every human being." Then, as if to heap miracle upon miracle, or chance upon chance (both terms refer if not to the supernatural at least to the super causal), we are told "the fact that man knows that he evolves entails the possibility that he can do something to influence his own biological destiny. The fact that uncontrolled evolution often leads to degeneration and usually to extinction makes it highly advisable that man take a hand in determining his own future evolution." [41] This is in agreement with Huxley's statement about man now being not only the servant but the master of evolution. Whatever else this mastery may entail, it involves the ability to distinguish between truth and error, right and wrong, and good and evil, and, therefore, to transform both the physical and the social environment. If the process of cosmic evolution is one, complex but integrated, *then it is not sufficient to say that at last it produced a responsible being but rather that in man it revealed moral responsibility and moral values,* in the direction of which, it had been moving all along.

I am not unaware of experimentation with animals, testing their psychic capacities, and we can cheerfully admit that between inorganic matter and life, between animal intelligence or awareness and the human mind, there are certain borderland areas which it is hard to assign to either category. On the whole, nevertheless, it is safe to say that the cosmic process takes the direction from matter to life to mind and that this process is one and irreversible.

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[41] The writer of the lines I have just quoted is George Gaylord Simpson of Harvard University. The article is entitled "The World Into Which Darwin Led Us." It appeared in *Science,* Vol. 131, p. 966, April 1960, but was originally delivered at the annual meeting of the American Association for the Advancement of Science in Chicago on December 25, 1959.

An Irreversible Order

These levels of being are not three layers of reality, as it were, baked separately and superimposed upon one another like the layers of a tempting cake. They merge into one another and emerge from one another through that creative energy which brings them and their contrasting qualities into existence.

It is no exaggeration to speak of the process as irreversible. There is no living tissue which is immaterial from the simplest unicellular creature to the body and brain and nervous system of man. They all can be analyzed into their chemical constituents, they are subject to physical forces, mechanical and electric, that define the body structure and transmit nervous impulses. *The reverse is not true.* While there is no life without matter, there is matter without life. It enters into life and interacts with life as its environment, yet it would be illogical to say that life emerges from matter. Life does not emerge from matter, it makes its appearance in the evolutionary process where matter enters upon the second stage of being and becomes living tissue. Yet we must admit there are *no immaterial living things.* The stuff of the stars is in the body and flesh of living creatures.

Similarly, *there are no ghosts.* Nowhere does awareness or consciousness or mind or soul make its appearance bereft of some outer garb of living tissue. There may be life without mind (no one can know) but *never can we experience or imagine mind without life.* This reverse order of phenomena is found nowhere. We are not now alluding to a mere temporal sequence. A stone, a rattlesnake and a geologist may find themselves in juxtaposition on the desert landscape; the trees, the moon and the lovers, may make an alluring picture together at the same moment in the same place. Yet there was the travail of the ages before matter took on life and life could display mind and mind could speculate concerning the way it had come into existence and the eternity of that which lay behind and within and beyond the evolutionary advance—before geologists could find interest in the stone, or lovers make the moon a symbol of romance.

Is this an advance and does it express purpose? Has man a value beyond other things? *Does it spell fulfillment that the world shall progressively lose its immunity to suffering and sin* and produce at last a creature who can react with pleasure and pain to both good and evil, can plan through knowledge and execute deliberately the transformation of his environment, of himself, and the society in which he lives, for purposes and ends nourished by ideas and pictures in imagination? Is this advance? Does the process as a whole—despite the innumerable dead that have reverted to the dust, despite the fossilized remains of extinct species that have failed and perished—display purpose?

Here we tread on dangerous ground. Materialist thought would force upon us the dilemma of defining one purpose for all the world or confessing that the world in its wholeness is without purpose and, therefore, a mere mechanism or a stupendous accident. We need not choose either of these alternatives. No finite being can plumb infinity and eternity and thus point to the *why* of creation.

This, however, we do know—that nature is purposive, that it has direction as well as movement, that it moves towards the emergence of reason, purpose and conscience, that it has not found fulfillment in the grain of dust or even in the burning suns which populate space, or the teeming life, vegetative and animal, which form part of the backdrop of the human drama.

It awaits fulfillment in man's further humanization. It presses forward to horizons where shine his dreams and aspirations and which await his decisions for good or ill. The future of evolution is not in what already is, but in what man thinks *can be or ought to be or might still be.*

We can never pretend to know why one insect instead of another was stepped on as a man walked across the street. We shall never know why one palm tree rather than another was uprooted by the hurricane, why one man rather than another was slain on some dangerous highway. There are doubtless causes sufficient but a cause is not a reason. When, however, man views the power of evolution as a whole with enough feeling and imagination—it becomes a revelation of purpose as well as power despite the occasional blind spots which confuse our vision.

It is impossible for me to avoid quoting that marvelous homily which is said to have been preached by a judge to impress the witnesses with their awful responsibility in a case where a human life was at stake. "Wherefore was man created in the person of the individual Adam (and not en masse). It was to teach thee that one who destroys a single soul of the children of men is as though he had destroyed a whole world and one who preserves one soul of the children of men is as though he had saved a whole world. Furthermore, God created one ancestral man in order that peace may prevail among all human beings, allowing no man to boast to his fellow man 'my ancestry is nobler than thine.' . . . Likewise, to prove the greatness of the Holy One, Blessed be He. For a king of flesh and blood may strike many coins from the same dye but they will all be identical with one another, whereas the Supreme King of kings, the Holy one, Blessed be He, stamps every man with the imprint of the first Adam, yet no human being is exactly like another. Therefore, every man is in duty bound to say 'for my sake too was the world created.' "[42]

What all this means to affirm is that there is only one human race—there are no demigods or supermen—none of them the spawn of the gods but all of them the creatures of God. Though they all bear the impress of their common humanity, they are each unique and individual, not merely typical of the race. Finally, the primal duty of man, no matter how humble his status, is to realize that he is more than a cog on the wheel of a world machine. He is an end term. He has not only instrumental value, but, as a human person contributing what he alone can to the conquest of nature and the humanizing of man, he gives ever-increasing

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42. Mishnah San, 4:5.

meaning to the natural process in which his being emerged. It should be noted that here the brotherhood of man is not explicitly based on the fatherhood of God but more realistically on the fatherhood of Adam. It is not the touch of divinity that makes us one but our common humanity. The historicity of the biblical Adam is not the point. The humanistic spirit which prompted the legend, is, I have been given to understand by a friend who is far richer in biological knowledge than am I, that the unity of the human race is a scientific fact as well as a humanitarian idea. Men of all sorts can successfully breed with one another. The vast number of Eurasians and Mulattos, of mixed Semitic, Alpine, Teutonic, and Celtic stocks, all bear witness to the fertility of such unions. The horse and the ass produce only the sterile mule, and this sterility seems to mark the coupling of different animal species even where physical union is possible.

All this will be designated in some quarters, with ill concealed condescension as a teleological explanation of nature. Final causes, as they were originally called, have lost some repute in the era of empirical science which is interested primarily in effective causation since it can verify its effects. Some time ago, however, Morris Raphael Cohen in his great work on *Reason and Nature* felt constrained as a logician to affirm the legitimacy of teleological relations. He writes, "Scientific causality applies only to certain abstract aspects of entities. There is no reason why entities that determine one another in some ways in a certain system should not be both together in another way in another system. Presence of causal relations does not involve the denial of teleological relations while the assertion of the latter presupposes the former." [43] Events may transfer from one system to another as we view the series in which they occur prospectively or retrospectively. Each may be a cause as well as an effect, a means as well as an end.

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[43] Morris Raphael Cohen, *Reason and Nature* (New York: Harcourt, Brace and Co., 1931).

For further references to this subject, see Jacob Kohn, *The Moral Life of Man*, p. 121.

The Emergence of Purpose and Value

A more recent and clearer appeal for the reinstatement of Aristotle's four causes in scientific discussion was made by Robert B. MacLeod of Cornell University. He defines teleology as meaning, "the explanation of natural events by means of purposive constructs." Of Darwin, he remarks rather wryly, "the opposition to Darwin came not from Newtonian materialists, but from the pious people whose doctrine he was unwittingly to support." "What is most challenging about Darwin" he asserts, "is his reintroduction of purpose into the natural world." Again, speaking of Einstein's theory as a challenge, not so much to the classical theory of space as to that of time, he adds, "If, however, we question the absoluteness of time, and play with the idea that, in different frames of reference, the relationship between antecedent and consequent may be reversed, we may be left free to think that something that has not yet happened may be an essential condition for something that is about to happen." There is also the apt observation, "if science is to include the behavior of man, it must include the fact of purposive striving. Sticks and stones do not strive but people do."[44]

If the human mind and human striving and human ideals have value as they widen the gap between insensitive matter and man's self-conscious personality; as the chasm grows between the reflex compulsive reactions of animal drives and urges and the life of man at its highest, directed by reason and conscience—then every stage of this vast cosmic process has at least instrumental value. It is the scaffolding which made possible the structure of life or congealed into the environment which challenges man to dominate it and to leap the hurdles, one by one, which space and time and matter themselves erect.

There is nothing *valueless* in the stars that are still to be measured, in the space that awaits exploration, in the beast-heritage within man that still needs to be tamed if he is not to destroy himself. As each stage of the cosmic process and every entity constituting it has value derived from what is still beyond it—man himself as *he is* from what *he might* and *ought to be*—so is each level of being a partial fulfillment of that purposiveness which is consciously realized in human endeavor. If man can say "for my sake the world was created," he must add, "but not to my glory alone," for all the multitudinous creatures, vast and minute, which are the contemporary landmarks of that fateful journey by which the human spirit entered the world of actual existence share in that glory.

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[44] Robert M. MacLeod, "Teleology and Theory of Human Behavior," *Science,* March 15, 1957.

There is a striking passage from Peirce which, though its language is that of our modern world, sings the joy of God with His creatures as rapturously as does the 104th Psalm.

> When the conclusion of our age comes, and skepticism and materialism have done their perfect work, we shall have a far greater faith than ever before for then man will see God's wisdom and mercy, not only in every event of his own life but in that of the gorilla, the lion, the fish, the polyp, the tree, the crystal, the grain of dust, the atom. He will see that each one of them has an inward existence of its own for which God loves it and that he has given it a nature of endless perfectability.[45]

Creation, Redemption and Legislation

The evolutionary process which is the cosmic process in its relation to life, and which is usually described in terms scientific and sometimes teleological can be more fully characterized by recourse to that familiar religious terminology, which whatever may be its dogmatic and historic setting in the religious traditions of the western world, displays a keen

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[45] Charles S. Peirce, *Values in a Universe of Chance—Selected Writings of Charles S. Peirce* (New York: Doubleday & Co., Inc., 1958).

into the nature and need of man's being and becom-
nature, the cosmic process strictly speaking, is not
ative, that is, it does not only reveal God the creator,
ecomes *redemptive and legislative* each time it passes
e order of existence to another. I use these words,
have already seen in the case of creation, not as describing events in time but as defining the *timeless essence of events* which occur again and again in the course of nature and will continue to repeat themselves in the natural history of man so long as man endures.

In the Bible, creation was first thought to have a date. It was recorded as the first event of time. Later religious reflections, both Jewish and Christian, under the influence of Hellenic speculation took creation out of the temporal realm and made time itself a created order within and between things—an order which could not have existed before there were creatures in temporal relation to one another.

The idea of redemption always remained in many respects true to its Hebraic root. The word means recall from alienation, liberation from bondage and slavery and ultimately from the shackles of sin and evil. The classical event in the Hebrew Bible is the redemption of Israel from Egyptian bondage; in the New Testament, the advent of the redeemer. In both, the word redemption and its synonyms imply liberation from sin and despair as well as the gift of freedom and restoration. In the liturgy of the synagogue, God is constantly alluded to as Savior and Redeemer as well as King and Creator.[46]

God, however, is not alone Creator and Liberator, he is also Lawgiver in the biblical tradition. He is the source of legislation, moral and social. The Commandments follow upon the Exodus. Only a liberated people can freely accept responsibility for law and law is imposed of necessity if redemption is not to be lost and dissipated but become increasingly significant.

The terms, as we employ them, do not refer to any particular event. They are not historical reminiscences or eschatological projections but recurrent features in the natural processes which lead to the appearance of man and are still involved in his further humanization.

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[46] Cf. Ex. 6:6; Lev. 25:24, 26, 48; Is. 47:4, 59:20, 60:16, 63:16; Ps. 19:15, 69:19, 130:8; Job 19:25, in the sense of Vindicator dismissing the indictment.

We have already leaned largely upon Bergson and Whitehead and used the term creativity as illuminating the fact that the actual is inconceivable save as the coming into existence of certain possibilities. Every novel or unique event is an instance of such creativity. Let us now see how every stage and level of being takes on a character that is creative, redemptive and legislative too.

Matter is bound to its location. Physical masses can act and react only where they are. Material objects, if in motion, remain in motion. If at rest, they remain at rest unless some other force impinges upon them. However the object came into existence, whatever may be the electrical units that ultimately constitute it, it remains immobile in its space-time field in the sense that it cannot pick itself up of its own initiative and so change its place or environment. The mass has, of itself, only the energy of inertia.

Then, somehow life begins. Organic entities have a mobility not possessed by inorganic masses. Even the roots of the plant search the earth for food and moisture. The leaves turn to the sunlight. Animals wriggle and crawl. They swim and creep and fly and walk and leap over the earth's surface. They are prompted by their own cravings. They seek fertile pastures, they stalk the prey, they make long migrations, they burrow deep pathways, they seek protection in caves or tree tops. Singly or in packs, they make their way on earth and in the seas and through the air. *Matter has been liberated.* Space no longer shackles the living things to this or that place. It has become after a fashion and within limitations, a free denizen of the space which environs it and is no longer a fixed piece of furniture which must be pushed or pulled.

The same process, however, which in a way has set matter free by giving it life, now once more assumes the role of legislator as well as redeemer. The living thing remains subject as does all matter, to forces or patterns of behavior which physics and chemistry in their wider scope, make the objects of their study. In addition, there is a whole realm of more complex natural law illustrated in the careers of all living beings and especially in the life history of the higher animals. Biology, biochemistry, the science of genetics and many other fields of investigation are concerned with these phenomena. Life is a more complex affair than even the most astonishing marvel that we encounter in inanimate nature. The dialectic between life and environment begins to include, we have seen, not alone the instinctive drives and compulsions that have made for survival but that aversion to anticipated pain and danger which the possibility of experiencing pleasure and pain has fashioned into an instrument for life's continuance.

To be a living thing, to enjoy the liberation which is life's gift, the creature consciously or unconsciously must submit to newer and larger realms of law than govern what is left of the environment, once you abstract all the life which it environs.

Thus the cosmic process which, in life, becomes matter redeemed now becomes again the legislator for that which it has created and liberated. The interesting fact is that nature or the process of evolution, reveals God in His creative aspect, bringing potentialities into actual existence and has some parallels likewise, with those other attributes of God in the dynamics of human history and the human spirit, upon which theology lays emphasis.

If we conceive *life as matter redeemed,* then *man is life redeemed.* I know that we are at a leap covering vast stretches of geological time and whole millenia of human pre-history. Through whatever gradations, and despite lapses and failures (and admitting many vague border phenomena), the transition was at last accomplished. Had even antique man been unaware of his alienation from animal instinct and innocence, the Greeks would never have ventured, against all factual evidence, to call him "homo sapiens" or the Jews to call him "image of God." He appears like neither of these in the daily press. Yet he knows, I suspect, that he is meant to be both.

What redeeems him from the bondage of mere animality is, first of all, a *mobility in many new dimensions.* The barriers go down one by one. It is obvious today that even in space he can wander more swiftly and farther afield and soar higher than the fleetest of his fellow creatures. All this, however, is in consequence of a mind free to invent, of supple hands capable of manipulating the stuff about him. He becomes the maker of tools, he contrives the wheels and the whirring machines to do his will in innumerable ways.

More important at this point is the fact that *time* no longer restricts him to the immediate present, to the mere "*now,*" as space restricts inorganic masses to the "*here*" in which they found themselves. Man with his enhanced memory and imagination lives in a world wherein every *present* includes an indefinite past and an unrealized future.

His is the only society, so far as I know, which recognizes not alone parents and young but ancestry and posterity. A human being is usually concerned with both. Animals, once they mature, become simply members of the swarm or flock or pack or herd. They are all on equal terms, with no bonds of particular tenderness towards the individuals that spawned them or the young they brought forth. No incest barriers exist to make possible tenderness without passion. The position of the command "Honor thy father and thy mother" among the famous Ten is not only ethically important, but socially significant. The young of no animals, as we have seen, receive love from or give love to their parents once they have outgrown the physical need of the parental functioning.

The past, on the contrary, continues to live in every man and, in imagination man can live in the past as it presents itself in personal recollection or social tradition, in recorded history or in reconstructed prehistory. We follow the trail backward by means of various clues, a piece of flint, a drawing in a cave, a fragment of shattered pottery, a fossil accidentally turned up by a spade or a chance plough. Even an ignorant man lives part of his life in some imaginative reconstruction, true or false, of the years that preceded him.

He lives likewise in the future. Man plans today for a tomorrow. His most cherished purposes seldom can find completion in one minute or one hour or one day or one year or one lifetime. He dreams always of something better yet to come, if only for his children in some future which he must help create. Every utopia, every millennial vision is placed in some "end of days" which helps make the present endurable.

A normal person evaluates the present in the light of some remembered past or some expected future. The adoration of the merely present, the homage paid the contemporary in art or religion or politics, is the unmistakable badge of bondage. Had the vulgar praise ever been bestowed upon Mr. Lincoln when alive "he was always up to date," it could never have been said of him on his death, "Now he belongs to the ages." The ages contain the "now" of every lifetime, and every lifetime is a residue of the past that has perished and the womb of a future yet unborn.

Great souls always know eternal life because they will not fragmentize time and, like timid provincials, live in only one segment thereof. Indeed, it seems to me to be one of the continuing functions of education to redeem man from his temporal provincialism; to enable him to record and assess the past and to employ the present in planning his own and mankind's future. When, as sometimes happens, we hear someone sneeringly and condescendingly discount classical art as old fashioned, but gushingly confess that he "just adores the primitive," I have a feeling that the poor thing has never taken the trouble to become acquainted with either the classical or the primitive. He merely follows the vogue. The primitive certainly represents an older fashion than the classical, and doubtless we shall all be primitives to our grandchildren some 10,000 years hence, unless we blot out that future in advance, through our collective stupidity and brutality. Primitive man and classical antiquity have both contributed to our being what we are. They have left their impress upon us, by means of heredity and tradition, in history and literature and the arts. It is good that we become acquainted with them and learn to understand them in love and sympathy, for they and theirs, as all other facts we encounter, must submit themselves ultimately on every stage of civilization to the judgment of the present, that *we may take their best with us into the future we are ourselves creating.* This is one aspect of man's freedom as he breaks the shackles which chain him to the mere now of his existence. In memory and anticipation, man wanders through an indefinite past and future. These become, as he develops, the ever-expanding boundaries of his temporal domain. The future is never closed. There is always a frontier.

The story of how flesh has been redeemed through the mind and the spiritual life of man, requires an intervening chapter which focuses once more on the physical structure of the body as that is correlated with the development of the human mind. It is difficult for one with only very slight knowledge of the scientific facts involved, even to outline such an important chapter. Yet the attempt must be made however diffidently.

The central phenomenon to which we allude is simply this—at some stage in the process of evolution a four-legged animal lost two of its paws that they might become hands. The convolutions of the human brain kept pace with the growing complexity and articulation of the hands possessed of a most remarkable member called the thumb. One of the most deeply moving of the prayers on the Atonement Day contains allusion to a statement in the book of Job, "Thou hast distinguished man from of old and has granted him the privilege to stand upright before Thee. For who can ask what doest Thou and if he be righteous what can he give unto Thee." To stand upright before God—that is man's distinction and the supreme mark of God's grace.

Stature and Status

The apes, even of the higher types, use their front paws mainly for climbing and as crutches to support them as they stride the earth. Only man with the two-fold curve of his spinal column stands upright in perfect balance. His hands are set free for the grasping and making of tools, his fangs and jaws, no longer needed to hold and rend the prey, have time to become organs of speech. The brain, balanced aloft in its armored box and no longer bent heavily to earth, grows larger and more complex in correlation with innumerable stimuli from hands and eyes.

No wonder we regard it as a miracle, be the performance ever so old, when a baby first disdains to crawl and stands upright, and when articulate speech, symbolic of thought, begins to issue from between its soft and flexible lips. For all this is nothing less than the proud announcement, in very fact, of its essential humanity. The part that human speech plays in the development of man has been strikingly described in the following passage:

> Nowhere in the world has there been discovered a language that can validly and meaningfully be called "primitive." Edward Sapir wrote in 1921: "There is no more striking general fact about language than its universality. One may argue as to whether a particular tribe engages in activities that are worthy of the name of religion or of art, but we know of no people that is not possessed of a fully developed language. The lowliest South African Bushman speaks in the forms of a rich symbolic system that is in essence perfectly comparable to the speech of the cultivated Frenchman." [47]

The tools which man creates may spell danger as well as promise. This was largely the case in the early days of the Industrial Revolution when labor was still unorganized. Technology over-developed or usurping a too dominant position, may disturb the balance of human culture and lend itself to violence and destruction rather than to constructive uses. Yet man, as *master* of his tools, through them achieves an extension of his own physical personality which makes even the beasts of the jungle no match for him. It is generally admitted that the naked two legged animal was a very vulnerable creature and would scarcely have been able to survive were it not for the fact that the club he could wield gave his arms terrifying length and power; that the arrow, sling and finally spearhead he could forge, gave him longer and sharper fangs and claws than the beast that threatened him. The magic fire, he could kindle at will, surrounded him with a zone of terror wider than that created by the snarl or growl or hiss of the beast.

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[47] Charles F. Hockett, "The Origin of Speech," *Scientific American* (September 1960), p. 89.

Aside from the modes of transportation, of which mention has already been made, the tools and machines which are man's creation extended his sense apparatus beyond its natural limitations. As we hear the click of the telegraph or listen on telephone or radio, our ears absorb the news and gossip and speech of remote regions. These impersonal machines convey impartially the ardent and personal message of a distant lover, or the raucous alarums of impending war. The microscope, the telescope and their electronic kin betray to our eyes the secret of nature hidden in immensity or in the puzzling configuration of the infinitesimal. Recently, man has hurled his eyes into orbit and actually spied on the dark face of the moon. He has seen what was previously known to be impervious to even the strongest lenses. The mass media of communication furthermore can introduce one branch of the human family to another and create a world intimacy such as never existed before; or hate can jam the airways and so blur the image of truth that we remain suspicious and hostile strangers to one another despite our nearness.

No mere increase in power, no broadening of physical horizons, no liberation from confining space or time or circumstances can save, unless we seek redemption also from those moral evils, which prove increasingly incompatible with our new found freedoms and our widening prospects.

If the labor saving machines can be said to be the flexing and extension of man's muscles in the production of goods, and the calculating machines the extension of his brain processes for purposes of speed and efficiency into electrical devices of his own designing—we can confidently assert that *the human individual no longer lives within his own skin.* He makes contact with remote time and places not only through increased mobility but as he sits now and here in his armchair or stands at his laboratory table. There is an ancient Jewish legend that the Primal Adam had cosmic proportions. We would interpret this to mean that the *final* Adam, the goal of the cosmic travail, is seeking to achieve bit by bit such cosmic proportions. Each man aims to be in touch with far flung space and time.

Chapter VIII

THE HIGHER LEVELS OF MAN'S FREEDOM

Judgment

This brings us to the final stage of man's redemption. Man continues to be driven by the instincts and compulsions and craving of the flesh but he also lives under a new and weird compulsion other than these when he exercises thought or exerts his will. He must perforce make decisions between alternatives of truth and falsehood, of good and evil if he is to act or think effectively. *He passes judgment* on the world of his experience and his conduct as man.

We have seen that there is in every entity an element of the self-caused and the spontaneous.[48] As far as I know, man alone is self-conscious and therefore aware of the decision that is his since he has the mind and imagination to conceive the opposite of what he chooses to affirm or do. This constitutes the essence of freedom; this is the source of his responsibility. He cannot do other than claim credit or accept guilt. His pride and his conscience will attend to that, for his *ego* and his *superego* are alike aspects of his personality.

To deny the freedom to make up one's mind or will, reduces to illusion every affirmation of faith and every venture of doubt. One man may assert, "only negotiations can prevent war." Another may insist, "I doubt that negotiations can prevent war." Neither statement makes the slightest sense unless each proponent can, in his mind, entertain the alternative to what may be his conclusion. Then alone the argument begins to make sense.

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[48] Cf. Peirce, *op. cit.*, p. 157.

This does not only apply to matters of opinion or affirmations involving moral and social issues. When one writes home, "we are having bad weather" he has passed a derogatory judgment on the weather. Any description characterizing an object or event, whether in a scientific discussion or in general conversation, with intent to distinguish it from something else is a judgment and selection from possible alternative predicates which might have been applied to the subject in question. In moral judgments between good and evil, between what is and what ought to be, the will is largely concerned. In aesthetic judgment feeling and taste will enter. This fact remains—that man not only reacts to his environment instinctively, but consciously appraises it, in every context of experience.

A man may exclaim "yonder is a tall mountain." Now, the goats that climb it, the birds that alight upon it, do in some manner peculiar to themselves experience the mountain. Only in man, however, will it evoke the judgment "this mountain is tall." The judgment implies an awareness of a class or type of objects symbolized by the word mountain. It further implies that these may be of various altitudes and shapes, some tall and steep, some comparatively low and gentle. The judgment determines that the predicates "low," "gentle," etc., will not properly apply to this particular mountain, so he rejects these and makes what he believes to be a true judgment on the landscape—"this mountain is lofty and steep." Because he can conceive of their opposites, his predicates assume definite meaning.

The normal man knows that if his judgments are to be valid he must examine the facts carefully and objectively (all inferences involve such judgments). He may not know the laws of logic or consciously follow them but he is quite aware that, unless his thought proceeds along certain paths and conforms to certain rules, he will go astray and never

The laws, alluded to above, are very complicated and very abundant. Many a learned work has been written deal-
hit the truth except by sheer accident.

ing with deductive and inductive logic with the empirical method or with mathematics and symbolic logic. The processes and formulae they describe are likely to be more subtle and complicated than the causal laws that hold sway over mindless beings. Nevertheless they add themselves to all other realms of law in the creature, man, to bestow on him the power to pass free judgment on the puzzling and baffling world in which he lives, that he may wring from it some of the secrets by which he may master it and secure his survival.

These considerations by no means deny what we have been at pains previously to emphasize about the rational order of the universe. This order is objective, not subjective, and concerns the implications of facts in their relation one to another. Yet only logical thinking can discover these implications and, because there are such patterns of thought, the mind is free to embark on that voyage of discovery, the goal of which is truth. If all our conclusions, no matter how arrived at, inevitably led to the truth or its opposite, the life of reason would cease completely. True thought means thinking in accordance with the *law* not in accordance with the *wish.*

Morals and Moral Man

Above all, how to behave becomes man's chief problem—a more and more urgent problem as man advances from the comparatively bound societies of totem and taboo to higher levels of social integration, less arbitrary and more enlightened, where he begins to feel himself a center of significance, the product of a culture and likewise its creator and transmitter.

Yet, of all creatures, man is the most lustful and desirous. He inherits all the needs of the flesh from his animal ancestry and can experience all the longings of the human spirit for truth, for peace, for God. He is, therefore, more spiritual and more sensual than the lower animals with their recurrent and periodic lusts. Endowed with memory and imagination, he relives his past appetites a thousand times; he enjoys in anticipation the revolting sins he may never commit. He discovers that though a satisfying meal may be good for him, two such repasts may bring remorse and yet the taste of tomorrow's feast makes his mouth water even today.

No man ever lived who, with all the resources at his command, could ever satisfy all his desires. He lives in too many dimensions of being. Nature had to moralize him to keep him going at all.

What are recognized as virtues and vices, the moral imperatives which knit men together into a society become the standards by which man judges an act to be good or evil. These become the realm of *moral law* in which every man is enmeshed once the human spirit takes possession of him; and if there were no such standards and rules to guide him, he would have no moral freedom whatsoever.

Certain considerations remain pertinent, no matter what may be the ethical theory by which we seek to explain the growth and development of morals in any society or to account for their source or motivation. A man, as we have already conceded, may be a hedonist or a stoic, a utilitarian or a pragmatist, call himself a relativist or absolutist, yet he will be forced to admit that no individual can, before each decision, trace the psycho-sociological consequences of his act in all its ramifications in order to discover whether or not it conforms to a certain ethical theory which he holds to be correct. He is born into a society of a definite structure. On the whole, he lets himself be guided by prevalent ideas of the right, by the virtues and imperatives accepted in *the behavior pattern* of the civilization in which he lives. If the stop and go signals on all the paths of life were indistinguishable, man would be paralyzed with fear before embarking on any journey for he would never know which might lead him astray until after disaster had overwhelmed him.

If he ventures to be prophet, saint, or innovator, he will declare some of these not high enough and will consider others as unworthy of the regard in which they are held by common men. In the vast majority of cases, however, the good man aims to be guided by what society, in his age and environment, regards as *its best.* The voice of conscience is a call to these standards. Revolution, it should be noted, is only justified if one thinks he has something better in view but then he must be willing to substitute a new set of rights and obligations for the old and to modify the mores that support them. Man cannot even succeed in being an *outlaw* without some law to define the status in which he perversely takes pride.

But if man of all nature's creatures passes judgment, intellectual and moral, upon the world and upon himself as well as upon society, how shall we express this phenomenon in relation to the evolutionary process? Shall we be content to say "He, man, speaks his mind about nature" or shall we permit ourselves to state that "In man nature begins to speak its mind?" In other words, shall we or shall we not agree with the scientist who declares evolution to be "A natural process which has transcended itself." [49]

Judgments of Value

Let us note, however, that the judgments which man passes upon himself and society and existence in general, are ultimately judgments of value. He does not only judge the insensate panorama of the world, attributing to it qualities and discovering essences. He does more than distinguish between truth and falsehood, between good and evil, in his rational and moral orientation, he ventures finally to assess in terms of value *the whole enterprise of existence* which has made this distinction necessary, inevitable and meaningful.

Every event, insofar as it is an effective cause, may have instrumental value when measured by its effect. Every entity and process which has entered into the making of man and his becoming what he is—the whole of his heredity and the totality of that environment against which he defines his being may have some form of instrumental value from the human point of view. This could only be so, provided human existence—responsive to pleasure and pain, productive of good and evil, swayed by its lusts and its dreams, driven by hope and despair—can be said to have any value as such.

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[49] Theodosius Dobzhansky of Columbia University, "The Present Evolution of Man," *Scientific American* (September 1960).

The simplest tool and the most complicated mechanism are instances of value if they can be used to produce objects of value more cherished than themselves, for those who manipulate them. With regard to the history of civilization, the distinction sometimes made between instrumental and institutional values and processes, seem somewhat artificial.[50] All civilization and all its institutions as they arise, political and religious, cultural and educational, have instrumental value insofar as they enhance the happiness, well being, and understanding of man.

The question will nevertheless always be posed—are they worth the travail and suffering and self-sacrificing that brought them into being, the sweat and sometimes the slaughter which helped to fashion and maintain them? And the question is in order because nothing that we can achieve in the world, *no social transformation can wholly eliminate all evil and sorrow and ignorance.* A realistic philosophy must always be aware that in any situation pain may be ameliorated by mercy and wisdom, evil may be overcome in every particular context in which we meet it, the boundaries of knowledge may be extended ever so far—yet neither pain nor evil nor ignorance can be totally expunged. We face the fact, I think, that the average life span of man may be indefinitely extended but that *no sane physician will ever claim that he can cure life of death.* Death is a phase of life; so are pleasure and pain and, for the human individual, the possibilities of good and evil. This is true just because wisdom and goodness are infinite and no finite being or perspective can ever encompass them in their totality. No era or culture can contain all the "goods" life may have to offer or all the ideas by which reality may be conceived if the perfect truth is to be known.

Every view which anticipates perfection of wisdom or of virtue in some particular stage of the historic process, is not rational but only apocalyptic and eschatological. The visions of the Biblical prophets concerning a redeemed and purged society were not utopias in the usual sense of the word. They describe no form of governmental organization as did Plato in his Republic, or as was the case with More, or Bellamy in *Looking Backward,* or Henry George in *Progress and Poverty.* They were visions of social perfection.[51] Sometimes, the central figure is the Messianic king, a man endowed with the spirit of God and governing only by persuasion, sometimes the crushed and martyred servant of God and man, who brings healing because his suffering and death bear witness to truth.

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[50] Cf. Alan Wheelis, *The Quest for Identity* (New York: W. W. Norton and Co., Inc., 1958).

There can be no doubt that these bold delineations of man's highest faith and hope were of tremendous historical importance and inspired social transformations again and again. They are not other-worldly. They enter into the dynamics of history, but they can never be the final fixed state which would replace moral struggle. Their worth lies in the fact that they are beyond history—its goal and its aim. They are placed in the End of Days because in religious fantasy—*in mythmaking if you will—the logically prior becomes the temporal beginning, as is the case with the creation story, and the everlasting "end" tends to become the final ending.*

Every stage of moral advance, the individual or society may attain, will evoke hopes of something better and will mean increased sensitiveness to good and evil on higher planes of behavior. Every problem solved in any sphere of knowledge only reveals new problems to be solved. So long as man endures, pain and sin and ignorance will remain part of the human scene though in any particular context of the struggle, the right must eventually triumph if society is to endure. Do not, therefore, be misled into saying, "Men have always made war and therefore war will go on forever. Nations have always struggled for power and the race for power will have no ending." This does not follow from what we have said. As slavery has been all but abolished, so war, I believe, may be succeeded by international peace. The United Nations with all its weaknesses may make room at last for a global society. Control of population together with other factors may make famine and pestilence things of the past. The time may come when our energies will be directed not to the struggle against such crudities of man's inhumanity but to such refinements of human conduct as are not yet on the horizon of our vision. All this, if the continued humanization of man goes on indefinitely.

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[51] Is. 2; Micah 4; Is. 11; Jer. 31:33.

If, therefore, the different stages of the cosmic process with all their innumerable creatures can be said to have instrumental value for the emergence of man and his history, there must somewhere be value that is more than instrumental, that is intrinsic to man's existence itself and, therefore, endows with value of its own every being embraced therein. We cannot demonstrate this value, and only haltingly describe it, but it is assumed as the fundamental premise in all the value judgments man passes upon life, and makes even the attribution of instrumental value intelligible.

The Vertical and Horizontal

Perhaps the most revealing phenomenon is just this: that in his value judgments, man appraises and measures his experiences *vertically, not laterally*. This has been aptly described by H. J. Muller:

> Probably only man, however, of animals on this earth, has reached the stage of pondering over values, and singling them out, as it were, by speech symbols. And so only he has attempted classifications for grouping things of related value together and has arranged these groups in hierarchies, with higher rank accorded to those expressing certain general psychological principles, such as heroism or truth.[52]

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[52] H. J. Muller, "Human Values in Relation to Evolution," *Science*, Vol. 127, No. 3299 (March 21, 1958), p. 625.

The hierarchical arrangement is exactly what I mean by the vertical assessment of values. Perhaps this, too, is indirectly correlated with man's upright position. It is a fact that in the more developed religions, the great gods are always on high, in heaven or on some mountain peak that kisses the sky, in distinction to the earthbound deities or the dark gods and demons of the underworld. The gods are high not because they are in heaven. *Folk imagination places them in heaven because they are high.*

When religion today speaks of the Most High as Father in Heaven, it is not indulging in naïve imaginings of the "pie in the sky" order. The rhetorical question has long been answered, "Do I not fill Heaven and earth." [53] The phrase points to the fact that on the scale with which man measures value, God is not only *within him,* or at his level *beside him,* but also *above him.* He who is the Whole of Being is also the *totality of all values,* those actually experienced and those potential in life's continuance. This is what we mean by God's holiness. Whatever experience man may accept as referring to such total value—a memory, an event, an object—becomes by association holy. It belongs to the sacra of his religion whether his religion be personal or historical. In the latter case, it is constantly being woven into the artistry of ritual.

To return to man. That man thinks himself higher than the rest of life would be brazen arrogance—as the mechanists and materialists constantly remind us—were it not for the fact that in man's evaluation of himself, he lifts into the realm of meaning and of value all the marvelous rungs of that ladder by which he has ascended. Every object and force in nature and all the living creatures that swarm anywhere upon earth are each of them symbols of some stage of the wearisome climb which can have no ending save possibly in man's self-obliteration. Every bit of matter, every organism, is like some type of being which once was ere man appeared, or part of that environment against which man today develops and tests his powers. Man strides the earth in the graveyard of the past, as he walks with the living on the planes of the present toward a future which never arrives but always lures him on.

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[53] Jer. 23:24.

Yet what possible criteria are there which would permit the application of such terms as *higher* and *lower* to the forms of animal life? It is apparent that we use the terms as qualitative distinctions not as magnitudes. Let us remember that the survival of the fittest means only the fittest to survive and not necessarily what is most intrinsically worthy of life because it is most lovely and most precious. The things that are truly desirable are often the most fragile. The quislings are likely to save themselves while the patriots perish. The saints so easily become martyrs, the prophets and truth seekers can perforce be silenced.

The dinosaur, our ape ancestors, and Gautama Buddha, have this in common: they all belong to the dead and buried past. They are all *behind us* because they made their advent *before us* in time. It is we who take them out of their time sequence and assign them different levels of being. Our value judgments, as we have already seen, justify us in speaking of life's development as matter redeemed and of the human spirit as flesh redeemed. Man's freedom and obligations under law are always widening in the progress of civilization, individually and socially, nationally and internationally.

Lapses from the order are many and sometimes long enduring, but we never think of them as history *in action* but dismiss them as *reactionary.* They hold back the slow march of history from the primeval slime to heights only hoped for and imagined and still scarcely glimpsed. Again, it is not in any fixed state of man upon earth that evolution finds its goal but in the progressing realization of the human potential. Its aim seems to be to endow the creature man with the human spirit.

The mechanists, the materialists and the scientific but humanistic pessimists are likely to disapprove of such judgments. They would hold us down to the fact that man is just one among many animals, differing from them in being endowed with reason and perhaps responsibility. Different in kind; more remarkable perhaps, but not necessarily higher and surely not possessed with any teleological significance. Is it not, then, strange that even in scientific classifications we sometimes meet with the distinction between man and the lower animals? Are we theologians not permitted to ask why are the giraffe and the elephant lower animals than man? Does greater complexity of the nervous system make man an animal higher or just *different?* Does guilt-feeling give a beast stature or only trouble? High and low refer in this connection, it is obvious, to value judgments which man passes upon himself and by which he assesses the world in which he lives.

What we have defined rather grandiosely as the Human Spirit, many will observe, is simply the spiritual phase of man's nature. It is just one aspect of his being. He is endowed with reason and conscience; he is capable of loving his fellow man and even his God—these are among his several spiritual characteristics which he only too rarely exhibits.

The other half of him, however, remains animal in shape, function and substance. Indeed, he may be said to be essentially animal—with certain strange deviations from general animality. Furthermore, his animal and physical nature is fundamental to his being. When the flesh disintegrates, the mind ceases to function. We have several times observed that man not alone experiences the cravings and needs of the flesh, as does all animal life, but that he is far more sensuous than the beast since his imagination enables him to enjoy in advance and in retrospect most of his sensual indulgences.

Despite all this, it is not quite correct to speak of two *sides* of man's nature. The "good inclination" and the "evil inclination" in rabbinic literature, as well as the psychological situation suggested in Rodin's famous work "La Pêche" must not necessarily be taken to imply the distinction between body and soul, between matter and spirit. They can as well be interpreted as the struggle of the righteous will against temptation, as the conflict between the ego and the superego.

Has there ever been a normal human being who regarded the physical and spiritual halves as *lateral halves*? He may cheerfully admit that he is a creature of the dust, that flesh has fundamental importance even for the right use of his mind and his reason. He will not, himself, however, be greatly impressed by such admission.

The cellar is always fundamental to a structure but the other rooms have greater importance for those who would make the house their home. A man lays the foundation for the sake of the house. He does not erect the house with the foundation in view. Therefore, he is likely to insist that love of truth, the longing for beauty, devotion to mercy and justice, represent the *higher* aspects of his nature which give significance to his humanity. A person may, with perverse pride, describe himself as a *low* sort of fellow but, he will never put the two sides of his nature on the same plane; he will sometimes admit, with becoming modesty, that he has his *higher* moments.

Even classical hedonism, such as that of Epicurus, had to make a distinction between higher and lower satisfactions in order to become an ethical theory at all. The higher aspirations of man, as these present themselves in the course of the evolution of life and the further humanization of the spirit not only have value in themselves as man assesses them, but they give value to all that precede them and have made their emergence possible.

They are thought to have intrinsic value because man needs not only something *by* which he can live but something *for* which he would live. "Man liveth not by bread alone." These *higher* things in life may or may not have survival value as far as the individual or even the race is concerned, but they alone can give value to survival. Indeed, the whole situation can be summed up in the tautology—*existence also has value insofar as it brings value into existence.*

Value and Existence

Let us tentatively call this the purpose of creation. The infinite perfection of God which nothing could mar because there is nothing that can rival, or detract from, the plenitude of His being, would have no value whatsoever save as this perfection enters into the *striving* for perfection mirrored in the course of nature (with its "nisus for deity" as Alexander would say), including the longings and aspirations of man. As a finite being, the latter can never be perfect, yet the vision of God's perfection gnaws forever at his vitals and becomes the infinite discontent which makes him feel somewhat ill at ease in every present and keeps him forever reaching out for some better or happier future.

Not all the psychologists in the world, even with the aid of certain theologians, will ever make man feel perfectly secure in the world of nature and history—the prophets never tried. The perfection of God as the whole of reality now becomes, through existence in time and space, a creative and dynamic power. Existence gives it a value which, as a self-fulfilled state of being, it would never have. The value of God's perfection is given new value through its piecemeal incarnation at all levels of being in the world of actual existence.

Thus, the infinite love of God has no meaning if it refers only to the infinite and eternal love with which God loves himself. Spinoza was forced to this conclusion at the end of the Ethics (despite many hints to the contrary on the way), when he affirms that in loving Himself, God also, by necessity, loves every creature which is a mode of his substance. Indeed, a god who loves only himself would represent egotism raised to the nth power. Creation is the grace of God manifest in actual existence. God is in all creatures and all creatures are in Him for His being embraces the actual and the possible, thinghood and essence, object and idea.

The Idea of the Good, of mercy, of justice, of truth and compassion, is not itself good though it may be good to entertain the idea. If God remains the idea or essence of perfect goodness, He is not worth worshipping, for He is then necessarily good, since there is nothing which He can possibly lack or desire, to tempt Him to be evil. A human sinner who in some moment of remorse is capable of an act of self-sacrificing mercy would be more exalted than He.

But God is not merely the essence of perfect goodness. Through His indwelling in the human heart which is His creation, He has made goodness *actual* by making sin and evil possible. Is our wrongdoing, therefore, the sin of God? The answer again is no. All that we do that is truly good is *the grace of God within us.* For all possibilities of righteousness as all other possibilities are a phase of God's being which transcends actuality. All the evil we do is *our evil within God* for actuality as well as all possibility is a phase of that whole of being which is God. Nevertheless, though our sins and virtues may be our responsibility, the result of our will and our choice, yet God who has left us free to do good or evil and has made us responsible cannot be totally uninvolved in the outcome of what He has established. How we may conceive of the share of God in human responsibility for good and evil, we shall have to discuss more fully when we seek to establish the personal nature of God. Here, it suffices again to point out that only in a material space-time flesh and blood world, in which reason and desire, instinctive drives and conscience, are in constant conflict, can good deeds have their high place—can duty and goodness be other than mere ideal constructs. Existence gives to goodness a value which it could not have within the being of God as transcendant perfection. It is not irrelevant, therefore, to say, whatever other considerations may be involved, God created the existent universe that value may come into existence and *in the process, existence itself acquires new value.*

I cannot help recalling, before leaving the subject for the time being, a remark which Ludwig Lewisohn once made. He was lecturing on the "Crisis in Our Civilization" shortly after the Second World War and someone in the audience had the courage to ask him what he meant by civilization. He answered, "A peasant riding in an oxcart on a mission of mercy is a symbol of civilization, whereas a highly trained technician, riding a plane of most advanced design, in order to drop bombs on a defenseless city, is a symbol of barbarism." I am quoting only from memory. Yet, the figure of the peasant and the oxcart has remained with me. Here we have a simple, ignorant man, presumably interrupting his own occupation and interests, prompted by his heart's compassion, to bring relief to a suffering fellow creature. The act is not too frequent and yet not so rare as to be extraordinary. How significant it nevertheless is! The idea of infinite goodness which we sometimes ascribe to God, the thought of divine perfection in the realm of all possible goodness, is as nothing compared with the fact that God has allowed this simple clod, this lump of grimy sweat and flesh to become the bearer, in the actual world, of a small spark of His radiant love. *This sanctification of matter and life is part of the miracle of creation, one of the obvious triumphs of the cosmic process.* That the barbarians are still with us flying even more devastating machines, can only prompt us to shed tears for the long road we still must travel in the process of humanization.

The Place of Purpose in Existence

As it is with values, so it is with purpose. Purposes do enter into existence; but they can only be actual because accident and chance also have their place in the world. We have already pointed out that neither purpose nor chance can be made ultimate principles of explanation. Reality as a whole can be neither purpose nor chance but must transcend each and tolerate them both.

Purpose we might now define as striving which is goal directed; it is will or passion illumined by an idea which lures it on. Not all men are equally goal-directed, some entertain only modest ends—well-being, better health, individual success. Some are socially oriented; they are concerned with social betterment and the good of posterity. The prophets and saints of the world are concerned with far reaching goals which involve the regeneration of man and the transformation of human life.

It throws some light on human motivation when we observe that men seldom acknowledge as *evil* the conscious purpose of their action. This may be to man's credit in his present state of immaturity. "Only a noble creature like man can entertain a purpose, therefore every purpose he entertains must necessarily be noble." The evils involved, men will usually say, are the humble means which are justified by the glorious end. Six million Jews had to be tortured and slain that Germany may become "judenrein" and that no taint of Semitic origin may pollute the German blood or dim the bright radiance of Teutonic culture. To young Nazis, the agonies they inflicted were only a necessary incident to assure the success of this noble achievement.

If it be to the glory of man that he alone can consciously be governed by teleological causes, this could only have been brought about because he constantly finds himself face to face with circumstances that interpose themselves between his wishes and their fulfillment. These evoke planning and striving. He must direct and plan his life lest he fall a victim to all sorts of unpleasant accidents. An accident we have described as anything or any event which does not fulfill a purpose entertained by us or any purpose known to us. It may or may not have a reason as far as we are concerned.

It should always be remembered that causes are not reasons. Science only tells us the "*how*" but not the "*why*" of events; how a thing comes to pass but not why it had to happen. How cruel it would be to say that the Chilean earthquake, which so recently not only shook and moved the earth but shocked and moved the hearts of men throughout the world, was planned by God for the purpose of bringing death and suffering to thousands of innocent creatures. What a pity if the cry of Job were stilled at this late date! We should understand that while the evils men do are undoubtedly factors in the totality of human sorrow and suffering social and individual, pain and sorrow are not always the punitive strokes of God.

It is because nature both nurtures, limits and threatens man that man had to become, and could become, capable of purposeful action and planning in order to survive. Man, in the course of evolution, leaped one by one the barriers which hemmed him in, as the human spirit acquired new capacities of thought and decision. It becomes evident that evolution could never have evoked purpose in man had it not first provided the comparatively stable, dependable, limiting environment, causally determined, upon which reason will and purpose can and must exercise themselves.

Indeed, purpose and accident often feed upon one another. The great calamity in Chile has become the matrix of many purposes, some born out of the determination and courage of the homeless, some conceived in the hearts of the generous and merciful everywhere, some setting in motion huge plans of relief and reconstruction on the part of governments and such agencies as the Red Cross, some involving long-range plans for scientific research in seismology and geology aiming to predict, in some indefinite future, the possible repetition of such a shock so that people may be warned in advance. The hopes and plans and purposes frustrated by the great calamities of today may thus flower, strange to say, into wider and more far reaching plans motivated by human love and wisdom and aimed at the salvation of thousands still unborn from disasters similar to these.

If, then, the mechanical, the determined and the accidental are precisely those features of the environment which make purpose both necessary and possible, then they too, though not being purposeful, *may be said to serve purpose.* If the whole process of nature and history in its large outline seems to reveal purpose, we dare not dismiss this as illusory because, in certain realms of being we cannot discover the particular goal or end they serve.

Some there are who would force upon us the dilemma of assigning to each individual item or occurrence in the world a particular place in a grand overall design, or admitting that certain purposes may indeed exist but that the whole has no purpose; the word simply does not apply.

We need not accept either of these alternatives. We do know that the evolutionary process is purposive, though it is not everywhere purposeful. It has direction as well as movement and the direction is irreversible. It moves from the inorganic toward the emergence of reason, purpose and conscience. It has not found fulfillment either in the floating nebulae or in the grains of dust or the burning suns which so abundantly populate space. The future of evolution—if man will give it a future—is not in some background of inorganic immensity but on the new horizon of man's further humanization where shine his dreams and aspirations and where his decisions for good or evil will advance or annul these aspirations. The future of evolution is not *in anything that is,* but in what *can be* or might be and perhaps *ought to be.* Thus it can be said that if the process of evolution is indeed one process, as Huxley insists, and can be viewed as such, it reveals direction as well as drive, purpose as well as power.

Professor Alexander somewhere remarks that we can only suffer or enjoy our own space-time; we can but contemplate the space-time of others. We can only in such contemplation recognize qualities on a level below us, or in creatures on our own level, but not on a qualitatively higher level. A man's dog has not the slightest idea whether his master is a philosopher or a clown, a saint or a sinner. To him, he is doubtless just a beneficent scent and the source of many delights. If this be true, then our wanderings in outer space, should they ever materialize, might make us acquainted with human beings further developed than we, possessing greater wisdom, greater goodness, with broader and more highly developed social habits—in other words, further on the way to humanization. Should we, however, encounter beings qualitatively different from man, on a different plane of being, our relations to them might doubtless be like that of dog and master. Their inner life will remain a complete secret to us. The humanization of man would then prove only *one* of the ends of the evolutionary process. The tides of being might have swept beyond us.

Of this only can we be sure—they have never *paused on* *planes below us* and they can carry us on, if we will, to a future many times longer than that past which saw even the earliest traces of civilization. The process in its wholeness is purposive because it has brought purpose into existence, and may depend on human purpose, for the possibility of its continuance.

Chapter IX

NATURE AND THE INDIVIDUAL

The How and the Why

Yet this discovery, that existence in general when we view it in its broad outlines, reveals what appears to be direction and tends to introduce will and conscious purpose into the area of human life, nevertheless leaves us baffled. Why should that being which Professor Boodin has called "the genius of the whole" leave precisely those details blurred which affect most intimately the individual creature or the particular human person? A clear overall picture (in this case of purpose) ought to permit us with patience and wisdom to so adjust the pieces in the jigsaw puzzle of experience that we would find for each individual item some definite place which belongs only to it.

This is far from being the case. We shall never know, as we have frequently remarked, why just this ant rather than another was stepped upon and squashed as an innocent child walked its contented way; why one palm tree rather than another was uprooted by the hurricane; why one man rather than another perished in the earthquake, and why certain people rather than others were burnt or dismembered when Coventry was being bombed.

Let us not confuse two different things. For all of these events there were causes aplenty, *but a cause is not a reason.* I am firmly convinced that the notion that if you discover a cause you have revealed a reason is one of the popular superstitions of the modern mind. It was my privilege recently to hear an able young physicist, full of enthusiasm for his science, make the statement that physics, as the most fundamental of all the sciences, can and may eventually explain everything concerning physical nature and the institutions of human civilization since the latter are in a sense monuments to the reaction of the animal man to his environment. He began with the physical composition of the atom and the molecule and went on sketchily to the evolution of life and the development of human society. His claim was not an arrogant assertion that physics had found the explanation of every phenomenon, but that physics, without involving anything outside its area, contained the explanation we are seeking.

In the course of the discussion I remarked that in my opinion the speaker *had* proven that the laws of physics pervade everything. This I would concede. But at the same time, I was equally emphatic that they explain nothing.

Consider the following incident. An elderly woman mopping up her hallway loses her footing, falls downstairs, and is killed by the fall. Now a physicist, granted that all science is rooted in physics, can give a lengthy and detailed account of how the whole thing happened stage by stage. The lady was no longer young, her reflexes were no longer dependable, the floor covering was slippery and she lost her footing. She found herself in a gravitational field, falling with the usual acceleration, so that she struck the final rise of the final step with a momentum sufficient to break her back. That is how it happened that she died. The hearts of her loved ones, I am afraid, will continue to affirm that nothing here begins to explain why it had to happen.

Our eyes go blank when somebody murmurs "Such accidents, I suppose, do happen, but why to *me* or *to my beloved* or *to one so sweet and tender*." Religion somehow harbors the faith that for every "how" there is also a "why." The answer usually is, God's purposes are inscrutable and no finite man can plumb the wisdom of the infinite. How, then, can finite man be sure that there is a purpose at all and that it devolves upon him to do God's will and purpose in the world? We go round and round in a circle because both question and answer, it seems to me, are incongruous with the notion of infinity.

The Individual Fulfilled in God

We have previously made it quite clear that infinity is not a magnitude but a serial ordering. If space is infinite, it is because there is no space so large but that there is a larger space which includes it, and there is no space so small but that it includes a smaller space. Similarly with time. If space or time shall ever vanish, as the physical universe is extinguished through radiation, and meets what the physicist calls its heat death, it will not reach its limit at any point or instant, any more than it could have been created out of nothingness at any instant in time, for point and instant have no dimensions, nor have they any *location* except between two other points and instants. The whole space-time continuum, the whole endless series of causes and effects discovered in natural and historical processes, are all phases of that reality which pervades them and transcends them. They are all in God and God is in them all, as their creative source. According to Spinoza, you remember, *extension* is infinite but substance has an infinite number of attributes of which we know, beside extension, only thought. Thought or the Idea and the rest of the attributes are the forms in which the Divine Substance transcends space and time and matter which are all included in *Extension*.

Religious imagination and poetry have been fond of dwelling upon God's pervading every possible vastness, "Behold the heavens and the heaven of heavens cannot contain Thee, how much less this house that I have builded," or "The heavens is my throne and the earth is my footstool; where is the house that ye may build unto me and where is the place that may be my abode. For all these things, my hand has made and so all these things came to be." And yet we occasionally come face to face with such sentiments as those expressed by Rabbi Jochanan, "Whenever you find allusion to the greatness of the Holy One, Blessed be He, there you will also find Him described in lowly humility 'for thus saith the Lord, the High and Lofty One that inhabiteth eternity and whose name is Holy, I dwell in regions high and holy, yet also with the crushed and lowly spirit to revive the spirit of the lowly and revivify the broken heart.' " In later Jewish legend, we are told that revelation began, not on the storm-capped peak of Sinai, but in the thornbush at its bleak and barren foot. This meant to teach that there is nothing, however lowly and insignificant, that is void of the splendor of God.

One dimension of the absolute and infinite we have still ignored. Reality, as the whole of being, or as God and Supreme Being, embraces all space and all time, the whole of existence, all space-time perspectives and all the frames of reference that determine them. The Infinite One is capable of being both "here" and "there," both "now" and "then" in any place and time, whereas a particular entity or a physical object (which Whitehead calls a nexus of actual entities) must be either "here" or "there" or "now" or "then" but cannot possibly be in two locations at the same instant or at two instants, past and present, in the same time sequence.

There is, however, another limitation which characterizes the *finite* and bears upon our conception of the infinite. We have noted that as soon as life made its appearance, the whole character of existence had undergone change. Every item for the first time became either a living organism, or served as part of its cosmic environment. As organism and environment, they entered existence together. The previous inorganic immensity was not environmental to life until the first organism entered into relations with it. It is not exact to say that the insensate environment came into being before the living organism. Whatever it may have been, it was not environment in the evolutionary sense of the word.

Similarly, when mind or conscious awareness first came upon the scene, every fragment of existence was called upon to play a new role. *It became either a thinking subject or a possible object of thought.* The idealist might say it was only the mind which converted the thing into an object of thought. We would reply that this is only half true. Unless there is something to think about, there can be no thought. Thinking is a traffic between subject and object and in the process the significance of both is enhanced. If Spinoza or Whitehead be correct and there is no "vacuous actuality" then every entity in existence, whether conscious or not, has a subjective as well as an objective pole. It can be prehended in the experience of another but only because it prehends another in its own experience. Alexander would say it enjoys or suffers its own space-time and contemplates or reacts, I suppose, to the space-time of another. Nothing is merely the sum of its universals as these are displayed to us in conceptual thought.

Even our fellow men, with whom I can communicate, will never abdicate the privacy of their selfhood. I may know all *about* my friend but *him* I shall never know. Through love and sympathy and imagination, I may realize that he rejoices or suffers, and that I can rejoice with him or weep for him in sincere sympathy. Yet, the pain which brings tears to my eyes remains my pain, the result of my love and pity. His emotions are forever his; and should my sympathy ameliorate his woe, the relief he feels will be an aspect of his own inner experience. William James has somewhere said that there is no chasm in nature like the chasm between two souls. I can never step from my selfhood into that of another. Love and sympathy and understanding may draw men nearer and nearer to one another. They will never serve to identify the subjective life of one with that of his neighbor. The virtue of loving one's neighbor as oneself lies essentially in this—*that knowing him to be forever your other, you are bidden to go on loving him as though he were you yourself.*

I can describe a blade of grass if I am a botanist, tell what sort of plant it is, describing the process of its becoming and perishing, defining it as soft and green, smooth or prickly and at the end you shall know what kind of a thing this bit of grass is and where it was found and how long it shall live. Its concrete individuality no one shall ever know. How it feels to be a blade of grass, its vegetative self, no one shall ever guess. Its form and life history will reveal everything save the subjective pole of its being. For us, it remains not a *subject* but an *object* of investigation.

The infinite and eternal God, Reality in its Wholeness within things and beyond things, has this advantage over the finite—nothing is merely His "other." He does not have to know anything with mere objectivity. He is within and without every existent thing. He is within the experience of (a), in which (b) and others appear as objects, and within the experience of (b) in which (a) and others serve as objects. In other words, he is on both sides of the dividing line between the objective and the subjective. *All subjectivity is His, as well as all objectivity.*

Only God can know the inner being and experience of all things and persons since they in their totality are God's experiencing of His own world. We as finite beings possessing human minds can know them only externally as objects reflected in our awareness, occupying our thoughts and imaginations, evoking in us certain reactions, feeling and emotions, described by us through the types of universals they display in the light of our particular perspectives. To us, the world is made up of innumerable objects in all sorts of relation to us and to one another. We take for granted that they have an inner being even as we have, however different it may be. The real fallacy of primitive animism was that it made the inner life of things very much akin to the inner life of persons, good or evil.

The difference all this makes in our conception of divine purpose must be viewed against the background of the conclusion to which we have already come. If it be true, as we have sought to demonstrate, that accident and purpose are knit together, that a nature not responsive to all our wishes is necessary if striving for a goal shall have value, then there are bound to be accidents. In their course, suffering and death are dealt out which seem to us irreconcilable with any purpose—much less with that of a wise and loving God. Whatever may have been the triumphant advance of evolution or the development of human civilization, all the progress attained or attainable will never explain the many species that have become extinct, the dead that have perished on the way up, the slaughter of millions in the recurring wars that have ravaged the world, the agony of martyrs slain even within the memory of living man, and the plagues that from time to time have carried off the innocent and the guilty.

Granted that life and death, the imminence of pain and goodness and sin are necessary contrasts in a world of values, is it anything but mere accident that(a), (b), and (c) should have been the victims of such necessity rather than (x), (y), and (z)? We would say no—as in the case of the little ant or the palm tree broken in the storm—were they merely the objects of our commiseration or the counters in the hand of God playing the game of world structure for His own delectation. They are neither, however. *They are each a phase of the life of God. Their pain is also God's pain.* Their agony takes place within His inner life, and could we know how one subject is related to another in the totality of God's experience as objects relate themselves to one another in our own experience, we might find that these divergent destinies could not possibly be irrelevant to the values and purposes revealed in nature and history, since they are relevant to God, and that the destiny of each is relevant to God's purpose for the whole.

We cannot know this because we are finite minds and can never leap the barrier which makes every experiencing self, the *other* to our own. Our knowledge of individuals comes to us through generalities—universals of quality and order. We are compelled to be objective except to those we love very dearly and then we say, they creep into our hearts. *Whereas, God's knowledge is both penetratingly subjective and completely objective so that the tiniest atom of existence finds within Him. its significant place.*

An Interlude on Nature and Freedom

The topics we have been discussing, moral decisions and purposeful planning all imply that the individual exercises freedom and initiative. The question will always arise: how can the reality of human freedom be reconciled with the causal order in nature? The moment we make the human personality, not a supernatural phenomenon, but a phase of nature, and view it in the realm of actual experience, it is difficult to assume that it is not wholly predetermined but that an act of will is a genuine choice between possible alternatives.

First of all, let me observe that by a free decision (and we ought use this word instead of will), we never mean an unmotivated one. There are always certain rational or emotional grounds for a judgment, or a purposeful act. Furthermore, it is not the will alone that is free, if there is freedom at all, while all the other faculties, the emotional and the rational, remain bound. Indeed, every voluntary act of man is grounded in the totality of his nature. This totality, however, includes not alone the bases for the ultimate decisive acts of will but also for the alternatives which he may entertain. It also includes the fact that he entertains, in thought and imagination, such alternatives between which he can and sometimes *must* ultimately choose.

Men are wont to remark that a man's character predetermines his behavior. Character, however, is never a determining element apart from that total personality of which we have just been speaking. Character itself is never completely determined until after the last decision has been made. No individual going into battle can tell which of his comrades will prove the hero and which the coward until after the dead have been counted—and maybe not even then.

And surely no individual knows how he or any other particular person will face a challenge he has never yet encountered. We often utter cruel criticism of people who, under duress or even torture, may have betrayed their friends. Can anyone know at what point his own morale would break? A man's character, the general quality of his living, up to a certain point may be a conditioning factor for future behavior. It helps to establish a moral perspective and bring into existence certain moral habits which may stimulate him to resist or to reinforce his moral will. Character is not something, however, which has come into existence prior to the totality of man's ethical decisions and, therefore cannot be regarded as an effective determining cause.

The argument against free will, as it is loosely and inaccurately called, can take still another turn. It is true, one might admit, that the will, as it discriminates between alternatives of good and evil and makes its moral decisions, derives from the totality of the individual's conduct. Yet, has any man ever chosen to be born what he has turned out to be? Is he not predetermined by heredity and conditioned by environment? The answer, I think, should be that he is *conditioned by both but completely determined by neither.*

Every embryo is a novel and unique experiment of the life process. It is generated by its parents, but the process of generation with all that emerges from it, is not generated but created. Creation, you remember, has no date before or after. It is inherent in all space and time. It is not an effective cause but the common ground of all existence and all becoming. Insofar as eternal creativity is itself free and undetermined, each entity in nature inherits a spontaneity limited only by the action of other entities in the same field of existence. We have elsewhere pointed out what I hold to be the error of Spinozism. He calls freedom a delusion since every being is a mode of Substance. Only Substance is necessary being and necessarily free. All else is what it is by divine necessity.

He seems to ignore the fact that if Substance is free, every item of existence must also be a mode of infinite freedom. And this inheritance of freedom is as objectively real as the necessity by which its character is defined versus all other modes.

Let us remember likewise the wave and corpuscle dichotomy in the present-day analysis of matter. On the lower levels of cosmic evolution, the elemental but restricted spontaneity within the atom is unobservable because the random movements cancel out in the larger inert mass. Man, who represents matter and life at its ultimate stage of redemption and liberation, becomes conscious of something free within himself. He is *self-conscious*. His individual selfhood asserts itself. He passes judgment upon the world and his fellow creatures, upon himself and all his acts.

In a normal mood, he is never ready to surrender this tragic prerogative, though he may sometimes long to escape guilt. He knows that it is he and not some *not-he* that has made the decision which his superego condemns or approves, and that he and his superego are all phases of himself. When, as a gesture of remorse a man offers the usual apology "I was not myself when I did so and so" he wants to let you know that in all his nobler deeds it was *he himself* who made the great decisions.

We must bear in mind that an organic whole is never constituted by the mere sum of its parts. The two strains of heredity, through both father and mother, which carry the genes defining and characterizing the individual about to be born, must not lead us to believe that the individual is nothing but the result of these elements variously shuffled according to the laws of probability as expressed in the Mendelian or other genetic theories. Where does this shuffling take place? Remember that the genetic elements arise in strains infinitely complex. No one has ever claimed that any baby or even the young of any animal will look like or be exactly like its father or mother or any of its innumerable ancestors. Nature knows no exact duplicates. I have been given to understand that no two grains of corn are so exactly identical that the microscope or some chemical test will not detect some variations. To revert to our question. The shuffling of the genes takes place, I suppose, in the fertilized ovum of the mother. But the fertilized ovum of the mother is already the beginning of a new human individual which in part determines how the genes shall function in the transmission of certain characteristics. The immediate environment of the genes, it must not be forgotten, is the whole ovum in its developing state. These genes present the individual out of the long complex history of life, singly and in combination, with certain possibilities of form and behavior and disposition.

The reader will forgive me if here and now, conscious of my use of the terms "genes" and "chromosomes" without adequate knowledge of genetic theory, I quote directly from an article by S. C. Dunn, Professor of Zoology, Columbia University, on Principles of Genetics contributed by him to the Encyclopedia Britannica in support of what I think I mean concerning the heredity elements in relation to the individual organism. "Thus the same arrangement of genes," says Dunn, "may produce different characters if the individuals carrying them develop in different environments. . . . The sum total of the physical and behavioral character of the individual is known as the 'phenotype.' Each individual response to his environment is determined by his 'genotype' (the arrangement of genes which each individual receives) but obviously not irrevocably or without some latitude in the range of responses. What is inherent is the potentiality of response during development to a range of environmental conditions." [54]

This alone is certain, that he will be exactly and think exactly and act exactly like nothing that ever lived before in all the history of life from which his genes derive. Just what will be possible for him and what decisions he will actually make, neither he nor we will ever know until the last judgment of thought or will has issued from him. Then, perhaps, men will exclaim "how well he has done considering his background" or "what a pity he had not the power to live up to his high origins." As no number of cells will make up an organism when put together unless they already are parts of the same organism which they are said to constitute, so it is with human personality. It is a whole imparting to each individual expression of thought or will the stamp of the whole person.

The following statements from H. J. Muller to whom I have already referred, are on the whole, I think, in agreement with our position.

> They (the supernaturalists) fail to see that if events in general were not lawful we could not foresee what the

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[54] S. C. Dunn, "Principles of Genetics," *Encyclopedia Britannica.*

> effects of a given action would be, and hence we could not control the outcome of events. . . . For men are themselves an outgrowth and a part of nature, and nature works through men as truly as it does through sticks and stones or through storms and stars. And an integral component of men is the power of making decisions in accordance with their own nature. . . . But although practically all of us humans possess some freedom in the above sense, to choose our thoughts and our course of action in our strivings for the greater fulfillments of our natures; nevertheless people in different circumstances have very different ranges of choice and amounts of opportunity for attaining rewarding experiences. . . . But since fortunately they are made in this way (with love and fellow feeling, J. K.), it is part of their own fulfillment to exercise their feelings and act upon them. That is, they have the potentialities to pursue these motivations *of their own free will,* (emphasis is mine, J. K.) provided that they are given appropriate opportunities.[55]

Dr. Mordecai Kaplan expresses a similar view of freedom as a natural endowment.

> Under these circumstances it is just as reasonable to regard the capacity to choose among alternatives and the moral responsibility that goes with it as no less built into the reality of nature than the evolutionary process as a whole.[56]

If environment further conditions the behavior of the individual, and who will want to deny this, it nevertheless cannot determine its action completely. It is not exact to say that Darwinism implies the selection by the environment of the species fit to survive. This would make environment the active and determining element and assign the organism to mere passivity. Natural selection is due to the constant dialectic between organism and environment. The mutations occur in the organism. Whether the bear will die of the winter's cold or grow a thicker coat depends as much on the nature of the bear as on the nature of the environment. The final outcome will be the result of this interaction. Neither factor can be eliminated as being purely passive.

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[55] H. J. Muller, "The Meaning of Freedom," *Bulletin of the Atomic Scientists,* Vol. XVI, No. 8 (October 1960).

[56] Mordecai M. Kaplan, *The Greater Judaism in the Making* (New York: Reconstructionist Press, 1960), p. 497.

There are certain passages in Peirce, who lived at the time when Darwinism was not yet a commonplace and the new physics was still largely a promise, which it is worth our while to rediscover. Peirce was a philosopher of science in his epoch (1834-1914). One of these passages reads:

> It is sufficient to go out into the air and open our eyes to see that the world is not governed by mechanism, as Spencer, in accord with greater minds would have us believe. The endless variety in the world has not been created by law. It is not of the nature of uniformity to originate variation nor of law to begat circumstance. When we gaze upon the multifariousness of nature we are looking straight into the face of a living spontaneity, a day's ramble in the country ought to bring that home to us.[57]

This face of living spontaneity, according to our philosopher, is what I would call the Face of God in infinite creative freedom. Each existent entity is in greater or lesser degree a phase of that freedom. That freedom as we have seen is limited only by all other creatures in the field of existence. In their togetherness, they trace certain patterns of general behavior which we call space-time continuity and causal law, or more inclusively, cosmic process.

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[57] Charles Peirce, "The Breakdown of the Mechanical Philosophy," *Values in a Universe of Chance* (New York: Doubleday and Co., Inc., 1958), p. 348.

Part III—GOD

Chapter X

IS GOD SO REVEALED, THE GOD OF RELIGIOUS EXPERIENCE?

The Transition from Being to God

The task we have promised ourselves cannot end until we have made it possible to translate our definition of being and the cosmic process as its character is revealed in the evolution of life, into such terms as would satisfy the *religious consciousness* that these are indeed descriptive of God, and that the totality of being is really that Supreme Being to which the human spirit reaches out in prayer and adoration.

Let us recapitulate, then, our view of the Whole of Reality, "The One and Unique" which embraces processes as well as entities and especially that dominant process which we call the Evolution of Life and the development of man.

We would define Being, then, in its totality or wholeness, first of all as that which makes actuality possible. We know that the world of entities and processes, of things and the becoming of things which are the only source of all our knowledge, actually exists. It constitutes the whole space-time continuum in which matter and energy are at work. We believe that this realm of existence is *possible* through our experience of its *actuality*. Nothing can be actual without it also having been forever possible and nothing ceases to have been possible because it is no longer actual. Should all sailing vessels become extinct, we would still be convinced that it is possible to navigate the seas by sail because for centuries man actually did so navigate it.

That which makes possible all existence cannot be found within existence. It is not a first cause; the causal is a form of existence. It is not a thought or idea, for both thought and mind are among the data of actuality. Nor can one say that it is self-existent or necessarily existent. The first affirmation would impute selfhood to nature in a sort of animistic pantheism, and the latter asks us to look for a compelling necessity beyond actual existence in order to explain necessities which only arise, as far as we know, within existence. Nor can chance, as we have already demonstrated, serve as a final principle of explanation.

The term "creation" then is the only possible symbol for what we have in mind. Creation is not a force because whatever forces there be, are within the field of existence. It is not in time, for space-time is the abode or field of the actual. Try as we will, we cannot call it other than that which makes possible existence in space and time. The first question the mind utters when some novelty comes into view is "what can it possibly be?" We take for granted that *it must have been possible since we encounter it actually.*

However, creation not only makes actuality itself possible, but in so doing brings certain possibilities, certain novelties, into the realm of the actual. It is possible for me to read by electric light because I possess an electric lamp which makes it possible to channel the electric current into a vacuum bulb with its filaments. And all this became possible because at one time certain inventive minds dabbling in the forces of nature discovered electricity among these forces. And this was possible because certain primates developed the mutations which led to thought and curiosity. And so on backward indefinitely. The whole cosmos, with its dominant process and its many subsidiary ones constantly brings into actual existence new possibilities of being and for being so that we are justified in saying at last—creation is that which makes *actual existence possible* and constantly brings *new possibilities* into actual existence.

The possibilities which it brings into existence, however, are not merely things and their becoming, but what in logic we call universals; what Plato has called "intelligible objects," "concepts of ideas;" what Whitehead has called "eternal objects" or "forms of definiteness." These are realities which are not things with a definite location in space or time but qualities and properties by which we define things and through which we discover what *kind* of things they are. It leads us to that generic structure of reality by virtue of which every object is not only specific and concrete, but also related to other objects in time and space by recognizable qualities, relations, patterns of behavior which give them their essential character.

These universals may be the qualities of things. I look in admiration at a sunset bathing in a red glow, not only the sky but the whole landscape about me. The sun sets but I know the *redness* has not disappeared. This was the same redness that characterized the sunset a hundred years ago when my father looked out into the sky, the same redness which may now be found on the plume of a bird, on the stripe of the flag, on the blood just spilled on a recent battlefield. The redness has gone from the landscape but redness has no place and no date. The sunset has a date, not the redness. Redness is part of the qualitative structure of reality as are softness, tonal qualities, beauty, sweetness. These qualities enter into existence with the things which they define and to which they give character.

A good man dies but I know very well that goodness has not died with him. There was goodness in ages before he was born. There is goodness in varying degree in all the people whom I know. There will be greater goodness, we hope, in human beings still to be born. It hasn't a date or a location or an endurance like a thing or a process. Therefore it is a universal. So as we have seen, there are universals of relationships with which logic and mathematics deal, and there are, finally, universals of value; love, justice, mercy, which enter into man's moral life and into his purposes for the future. Creativity, therefore, is what we mean by this two-fold aspect of reality. It makes actual existence possible and brings universal possibilities *of* being and *for* being into actual existence.

If, as we have made bold to state, God is the whole of reality, then He is that source which makes existence possible and brings these possibilities into existence. We may conceive Him as within all the entities and processes of nature and transcending them because the possibilities which existence enables us to envisage, even those as yet unknown to us, are within His being. They are objective facts in the overall structure of reality, not subjective illusions. He is, to use the significant ancient name, "the Abode of all the world." He is within all concrete things and processes and all of these are within Him since He remains forever the reservoir of possibility, *all possibilities,* their thinghood and their essences.

Since we have seen that the dominant process, the evolutionary process in the cosmos, is an irreversible one leading from insensate matter to life and feeling, to reason and conscience, to purpose and aspiration, we are at least not descriptively irrelevant when we speak of such a process as itself *resembling* purpose or personal design.

The proposition I would defend is that God as we have described Him cannot be held to be a person among persons. That would be an error. And yet though not a person, it would be a still greater error and miscomprehension to speak of Him as impersonal. If anything, I would put it this way—He is the dynamics of all nature, the life of all living, the thinking of all thought. God is not *infrapersonal* but *ultrapersonal.* The nature of God is beyond mere personality, not below it. All personality is a phase of His being but all possible personality, whether it be actual or not, is included in that which we call God.

We have no pronoun for that which is ultrapersonal or suprapersonal; we cannot call it "it" because we use the neuter for objects which personality can design and manipulate, not for that which initiates design. Having no perfectly satisfactory pronoun, we can use only a personal pronoun such as "He" to point to that which is both beyond the neutral "it" and the "he" or "she" of gender.

We have already discussed the fact that if there is a universal whole, no matter how complex and divisible its parts, it must have a subjective as well as an objective pole as have all its constituent entities or modes. *It is the supreme object of all experience, conscious or subconscious, and the supreme subject of all experiencing of any type.* If there is a universe, as all literature, art and science take for granted in their progressive inquiry concerning its constituents, that universe must be the Universe of God.

Viewing that Universe conceptually, we know it as the supreme object of all contemplation, but also as containing our conscious subjectivity engaged in contemplating it. In like manner it contains the subjective pole, conscious or unconscious, of all that exists or will anywhere or anywhen come into existence. This subjectivity cannot be less rich than all the conscious life that ever was or is or will be. As the objective multiplicity of the universe is fused into the whole field of existence, so the subjective multiplicity of things is fused into the one transcendent subjectivity of God. This makes the whole of being, personal.

The direction of evolution is, therefore, the revelation in nature of God's personal essence, what the mathematician Weyl called "the inner" which in its metrical external aspects is matter and energy. The movement from matter and force to conscious reason, an irreversible progression, is the display in serial, objective, and chronological form of the eternal character of God.

Religious Terminology and Philosophical Formulae

If, then, this "Whole of Existence"—including its many processes and that dominant process which we know as the evolution of life—may indeed be God, has the religious terminology which describes God any rational relevance to the situation?

There can be no doubt that beyond the world symbolizing Deity itself, the designations for God are anthropomorphic. They ascribe to being as a whole certain properties which man discovers within himself or within the range of his social experience. I refer to such terms as Father, King, Judge, Redeemer, Legislator and their like as these are found in the literature of religious experience and worship. Post-biblical Jewish literature is particularly rich in descriptive phrases for God, some of which have emotional overtones while others already reflect speculative thought—"He who spake and the world came into being," "Life of all worlds," "The Holy One, Blessed be He," "The Compassionate One," "The Eye of the World" (the all-seeing), "The Shekhinah" (in the sense of the indwelling God), and many others. It should be noted that the tetragrammaton which, according to the interpretation of Exodus 3:14, itself bore some relation to God as Being, was not regarded as a proper noun for God. It became a cryptogram for which you could substitute any appropriate designation. This encouraged the weaving of a great variety of descriptive phrases which together reveal the Jewish God idea perhaps more truly than any of the more ambitious attempts at clarification. In the ethical homilies of the rabbinic literature, the tetragrammaton finally was thought to point to God in the attribute of divine love.

This proliferation both in poetry and prose of names descriptive of God naturally produced many anthropomorphisms since their primary purpose was not logical elucidation of the God idea but of the *idea of God in relation to human values.* Whatever the totality of all being may contain, it does enfold those phases of human life in which the notion of God and our aspirations for God have their rise. The word "King" may for the most part signify a human ruler but every human being feels he is subject to a moral law and moral imperatives not of his own devising which demand his allegiance to a "Kingdom" that transcends the state to which he may be subject.

Since we can only describe Supreme Being as it is relevant to the human perspective, we must expect such anthropomorphisms in the vocabulary of popular religion. Neither science nor mathematics are wholly free from them. Whenever the scientist uses any qualitative terms describing the subject of his science, "light or dark," "soft or hard," "colored or drab," "living or dead," when he describes a drug as "curative or poisonous" he does so, unless he otherwise qualifies his statement, from the standpoint of human perception. He means what to man's perceptive apparatus and on the scale by which he measures values is soft or hard or helpful or harmful.

It is interesting to observe that mathematics and logic are full of sexual terms. Wisdom, in almost all languages, is female. "Conception" and "concept" are terms derived from the begetting of children. A "penetrating idea" or a "pregnant thought" are all sexually anthropomorphic. The final praise we bestow on Aristotle or Thomas Aquinas, on Newton or Darwin or Freud is not that these had logical or analytical or even inquiring minds; we say at last that they had "fertile minds." We cannot help describing the universe as a whole in terms of the human perspective from which we view it and all our science and philosophy as well as our religion bears witness to this limitation. Language is extremely conservative. It makes old terms do even for new ideas, like the "rising of the sun" to which we have already alluded. And these terms gather richness or connotation just because of this ancient usage. Sometimes they become overburdened with feeling and we must abandon them for something more accurate. Then science substitutes a new word or symbol.

In our case, however, where we are seeking words to point at something beyond mere existence, to something which is as well the infinite sea of possibility—in which existence itself may be but a lonely island. Our powers will always fail to find the one fitting word which will serve all occasions. We take refuge in a mutiplicity of overlapping terms, in a vocabulary we have inherited that is rich rather than exact. God is none of the things described in purely religious experience, but He is more than all of these, for as man develops, he senses new relationships between his own self-conscious aspirations and the processes and possibilities in that Reality which may thwart him or fulfill him and to whose reign he must ultimately bow.

The God-Idea and the Test of Prayer

No theory of the nature of God can vindicate its rationality unless it can also account for the rationality of prayer in some form. A god to whom it is absurd to pray is merely a shabby logical construct that has usurped an ancient and honorific title. It is a pretender to a throne which no longer exists.

The prayerful attitude, however, is a rational one because in it the needs of men seek their place in the creative need of God, to become a factor in the evolution of human life and history.

Prayer is founded on need in a two-fold manner. There is, first, the general need for self-expression wherein prayer plays the psychological part which all self-expression plays in human experience. Secondly, there is the particular and urgent need which seeks not only self-expression but also fulfillment and satisfaction.

Chapter XI

THE RATIONALE OF PRAYER

Analysis of Prayer, Faith and Resignation

The form of self-expression which prayer assumes, however, is always that of communication. We pray not only *for* something but *to* something. I have a sneaking suspicion that all *expression* aims ultimately at *impression*—that all the arts are so directed. No one, I believe, has ever painted a picture or engraved a stone, written a book or sung a song in the expectation that its destiny will be accomplished when once it has left his hands and he has worked the compulsive urgency of his thought or emotion out of himself. There always lingers the hope that someone else one day will see, and hear, and understand. If some artists deceive themselves into thinking that their work is only the externalizing of a mood or an impulse, then it ought logically be destroyed at the moment it is produced. But if he preserves it, even if only that he may refer to it again and again, it takes on the nature of a man talking aloud to himself like a lover pronouncing repeatedly the name of the beloved, like a singer constantly humming a tune which he has composed but never published. Through the work of art, he makes himself both author and audience, impressed over and over again by the creative self-expression of a mood long past.

Prayer, which only in its liturgical forms can be called an art, yet assumes that there is a Presence which listens, that the burden of man's needs is also born by God as is the inner life of all His creatures. Prayer, therefore, is founded on faith in a being with whom the soul of man can commune and communicate. It implies the faith that the Being within us and beyond us, source of the actual and the possible, cannot be thought of as impersonal, nor as a finite personality limited by the other which defines Him, but as infinitely exalted personality embracing each finite subject and its "other" on whatever stage of existence it may be found.

If being were only matter as viewed from the outside, without subjective or noumenal reality, if it were only causal process without revealing inherent value or purpose, prayer would be an irrational gesture. The cosmic process in its wholeness seems to be nothing of the kind, as we have already seen. The hearing of prayer is not an auditory perception on the part of God nor even a matter of objective knowledge. It is the participation by God in the pain and travail, as in the joy and triumph, of man, since these are all phases of the Eternal Being.

If, however, we require the faith that every prayer is heard, we also require in our communion with God a *parallel resignation.* In the daily prayers of the synagogue, the order of benedictions reaches its climax in the words, "Hearken to our voice, O Lord our God, Have pity and compassion upon us and receive our prayer with mercy and favor, for a God who heareth prayer and supplication art Thou, and turn us not empty away from Thee for Thou hearest the prayer of Thy people Israel with compassion. Blessed art Thou, O Lord, who hearest prayer." Here, God is not importuned as in certain other instances, as *one who answers prayer* but only as the one who is cognizant of all the prayers wrung from the suffering and aspirations of His creatures.

And, therefore, we must not confuse prayer as a need oriented toward God with the mere verbalization of that need. Prayer is designated as the *Worship of the Heart* in that synagogue tradition to which we have already referred. There are religious sources innumerable which stress the fact that private prayer can be independent of public worship or sacred place or even the spoken word. Hannah, the mother of Samuel, is said to have "communed with her heart" and to have "poured out her soul before the Lord." Even the "broodings of the heart," never formulated in audible speech, but taking place in articulate silence are said to be tantamount to prayer.[58]

It is these two elements of inwardness and resignation to God's will which distinguish prayer from all forms of popular magic. Magic always involves some stringing together of words, some strange formula like Open Sesame, some object having occult power—the magic wand, Aladdin's Lamp, the witch's brew—or the magicians of ancient civilizations, not to speak of the sorcerers and wizards of more primitive eras, whose function it was to supply the proper amulet or talisman so as to compel the gods or demons or spirits to do their will. Magic is always compulsive, prayer never is. It waits upon God's decision, and no religious soul has every prayed without affixing at least implicitly the proviso "May it be Thy will" that this my prayer be answered.

If it be true, then, that prayer is not compulsive, and that what ultimately happens depends upon the will of God —what function has prayer except to provide the satisfaction of self-expression? It may do us good, and bring relief to unburden ourselves of our needs and desires, to confess our guilt, to affirm our aspirations for peace and justice, to sing the glory of God as the poet might sing the beauty of sea or sky. Such prayers bring their answers in their wake. God's answer is contained in the prayer itself, not otherwise. We might speak of it as a response *through* prayer rather than *to* prayer.

The difficulty for us who believe in the causal continuity of nature is with such prayers as we would call petition or supplication and which we are likely to utter in concrete situations of want, despair or danger, in sickness or distress. It would, with specific variations, be some form of the almost instinctive cry "God help me," which even an atheist might utter when his denials for the moment sink back into the depths of his unconscious, and he affirms his true self. Dr. Heschel has beautifully described this situation in his book *Man's Quest for God:*

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[58] The various interpretations found in Midrashic Literature to Psalm 4:5 "Speak with your heart upon your couch and be silent" illuminate this point.

> "The dignity of man consists not in his ability to make tools, machines, guns, but primarily in his being endowed with the gift of addressing God. It is this gift which should be a part of the definition of man.[59].

A mother praying for the life of her sick child may or may not find the answer she desires. Should the child recover, when she had all but given up hope, she would doubtless ascribe it to God's answer of her petition. Not at all, say the skeptical. The recovery was due to the devoted nursing the child received, or to a new vaccine just introduced, or to an antibody that had just been discovered. The progress of medical science is to be thanked for this seeming miracle.

Now, is anyone so naïve as to think that the need for healing was a discovery by some wizard or medicine man, as in my youth so-called free thinkers thought the need for God to have been foisted upon man by priest and priestcraft? Did not man discover both in his own heart as he cried for help in pain and despair? It is this age-long prayer, of which the cry of the mother alluded to above may be regarded as but one note in the poignant crescendo of sorrow, which, through God's grace in the last instance, directed the whole process involved in the child's recovery to its desired end. This is the crucial point and it is applicable to numerable situations. Prayer is the need searching in God for the answer, and if the need is real, God sends the answer through natural processes including the skill and wisdom of man. For He is the creative source of all actuality and every unrealized possibility, since the chemistry of matter, the mind of man, and the needs of life are themselves ends for the creative processes which brought them forth, but also means for the further revelation of His will.

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[59] Abraham Joshua Heschel, *Man's Quest for God* (New York: Charles Scribner's Sons, 1954), p. 78. Dr. Heschel refers to *Midrash Tehillim* 4, 5.

Man's Radical Needfulness

Prayer then is a reflection of man's needfulness, of his radical and devastating helplessness, of the fact that whatever else he may have to rely on he must in the end rely upon God for even the satisfaction of his slightest wants. "God helps him who helps himself," say the self-reliant, and the skeptic is likely to nod his head in assent at this cliché as though it made God all but superfluous. On the contrary, it makes God all the more relevant and necessary. Whatever powers man can summon in some emergency of need—in pain or sorrow, in longing or despair—have their source in God and are a phase of God's power. Whatever object or tool a man devises to satisfy his need finds its possibility in that whole of existence which is the scene of God's creativity.

The needs themselves are implanted by God in all His creatures, for what a creature *is* is ultimately what *it needs* in order to be itself. These needs which in man find expression through prayer are themselves a reflection of the need of God which finds expression in His creativity.

Man has everywhere and throughout the ages asked for his daily bread. "Let him then go and harvest his grain and grind and bake it or beg his neighbor for it and not waste time in prayer," we are prompted to say. "Let him hunt the beasts whose food grows wild in field and forest. Thus he will provide his own nourishment rather than humble himself before God in petition." Man, however, is too much of a realist not to know that the kernel of wheat he holds in his hand or the fruit he has plucked from the tree, or the flesh that now seethes in his cauldron is a gift wrung by his need and hunger through magic of prayer from the hand of God.

What he eats requires the earth to nourish it. The earth must drink in the rains. The clouds distill their moisture. The distant sun must radiate its light and heat. Even the primal forces that molded the stars during aeons only to be calculated, formed the sun and the satellite whose crust both supports him and sustains him. In other words, as his thought matures, he discovers that *in needing this grain of wheat he virtually needs the Whole of Being.* He needs God who has made all this possible in creating the evolving physical universe through which alone man and his grain of wheat could find one another across vast expanses of time and space.

This is only one phase of man's dependence on God—his utter helplessness without Him. Furthermore together with all living things, the pangs of hunger, the urgency of his physical drives, impels man likewise to seek the path of survival.

Now among the novel properties with which, in the course of the evolutionary process, God endows man are not only the gifts of reason but that manual dexterity which has led him in the service of his needs to invent tools, the arts of agriculture, and all the other arts and sciences. These qualities and achievements as he attains maturity translate themselves into yearnings for beauty and goodness and social justice by virtue of which he seeks an ever more abundant life, one which must be lived "Not by bread alone."

The needs of life, animal and human, *trigger* the complex processes by which alone life seeks to satisfy its needs. But neither life nor its needs nor its satisfactions would be possible were these not in harmony with the creative need of God as revealed ultimately in the course of cosmic evolution, past and future. In prayer, our own needs communicate with His creative needs.

Man's Needs and His Total Need

Prayer, therefore, is often left unanswered because we cannot unerringly distinguish between our true Need as human beings, in the satisfaction of which our nature finds fulfillment, and those fragmentated cravings and desires which we mistake for needs but in the suppression or frustration of which, strange as it may seem, our real need may find its outlet. The deeply religious person (all the saints of the world) though much of his life may have been spent in the ecstacy of prayer, knows full well that *not all* of his prayers *will* be answered, that all *cannot* be answered, that many *should* not be answered.

All prayer cannot be answered because individuals have from their own point of view, in their own finite perspective, conflicting needs. In the heat of battle, in the struggle for survival, each prays that his may be the victory. Two men look at the heavens while the burning sun beats upon the scorched earth. The farmer prays that rain may come; the flyer bent upon a mission of mercy hopes that no cloud will dim the perfect visibility of the far horizon. Even God cannot do and not do, the same thing at the same time. And who knows which prayer represents the true need of either of these worshipers? Would it in the end be better for the flyer, or for the sufferers to whom He would bring relief if the rains should fail and famine should ensue for all? Would it be better for the farmer that tomorrow it shall rain or that the mission of mercy, of which he himself may someday be in need, shall prove a success?

Not all prayers *should* be answered. For what man is there, if he is endowed with a sensitive conscience and some power of self-criticism but has learned to distinguish between his many wants and desires and his actual needs?

He may desire many things which he does not really need but which he mistakes for needs. A man may want vengeance over his enemies or the satisfaction of his covetous desire for wealth, both of which he might do better without. Our wants which in the literal sense of the word mean the things we lack are always astoundingly more numerous than the things we need.

The man of deep and sensitive vision realizes that God in whose being are the creative forces which call forth the world in its heterogenous and individual multifariousness, who "heareth the young ravens when they cry" and "at whose hand the young lions seek their food" as well as the hoards of mankind, cannot identify Himself with the needs characteristic of one type of being to the exclusion of every other *without hurt to all.*

We are variants of living tissue and what variety we are can only be defined versus all the other forms of life. What we would be without the life process that has produced these others and their needs, we do not know. We may say of the young man eager for truth that he would rather study than eat. Should God, therefore, supply him with books rather than with food? In the need for food, he is brother to the worm, but neither worm nor scholar can fulfill their essential being without nourishment. Reaching down to even lower depths, we find this situation. The needs of life cannot fulfill themselves save as the needs of the physical universe are met through those patterns of forces and energies which build the inorganic matter of the cosmos into the cosmic environment for life's birth and development. And as for life, God's will is not only for the individual creature with its needs and wants but for all the laws of living tissue, including pain and death themselves which permit life to proceed to higher levels and new achievement while successive generations and species make room for the creative advance.

In what sense, then, is prayer a dynamic force shaping the history of the physical universe with its space-time continuum, and entering as a determinative factor into the developing destiny of human society and human spirit? This can become clear only if we realize not that need produces no interruption in the causal order but that *causality itself can be viewed as a process evoked by the need which it helped satisfy.*

Again, let us emphasize that there are no events in nature which are merely cause, and none merely effects. Every event is both cause and effect. It is cause when viewed with relation to the future; it is effect when viewed with relation to the past. The clouds of yesterday caused the rain of today, but were the effect of yesterday's heat. Science can never predict the effect save through the observation of the causes that precipitate it and it can never define causes except by the effects they produce. Cause and effect are mutually determinative. We can confidently predict that the combination of two atoms of hydrogen and one of oxygen will produce water because we have previously learned that water *yields* two atoms of hydrogen and one of oxygen. No event is hallmarked "cause" or "effect." Each event functions as it does by virtue of its being a cause defined by its effects, and an effect determined by its causes.

Let me reiterate: natural history is not made up of a series of causes and effects, but only of a *series of events* of which each is both cause and effect. There is in nature no first cause and no final effect, because there is no history save in time, and in time there is no absolute beginning and end. So long as anything happens, time endures. So long as time endures, something is happening. Times all begin or end in the eternal.

Causal Necessity in Terms of Need

Perceiving then that effects are logically as necessary to causality as causality is to effect, let us describe this reciprocal relationship in more anthromorphic terms; by that I mean, terms more meaningful for human experience, though nonetheless logically relevant to all natural processes. Let us speak of means and ends instead of causes and effects. The oxygen and hydrogen atoms have combined to the end that vegetation may spring forth. (Do not be misled by this over-simplification. There is always a complex nexus of causes and effects in any large natural transformation.)

Now, in conscious human experience, the goal we have in mind can only be achieved through selection of the appropriate means and only the appropriate means can achieve the desired end. I cannot write these lines without pen, pencil, or typewriter, and I take pen or pencil in hand becaues I wish to write these lines. A surgeon *calls* for a scalpel of a particular kind to perform an operation and will tell his class, without being at all aware of the gross anthropomorphism he is employing, that the operation *called* for such and such a scalpel. Both statements are perfectly logical and equally true.

In all such cases, however, it is obvious that we are dealing with a human agent or a human observer who is capable of purposeful selection, as we have already observed, and into whose acts final causes as well as effective causes constantly enter. Now it is true that on the lower levels of nature, there is no evidence that events are purposeful and tend toward a goal of which *they are themselves aware,* and nevertheless, this mutual selection and adaptation is everywhere present.

Ends determine means as truly as means determine ends. Instead of stating that the continuance of life upon earth is the effect, in part, of heat derived from the sun, I might just as well say that life upon the earth *requires* or *needs* the heat of the sun and that the heat derived from the sun is adapted to fostering life upon earth. I might truly say that the expanding steam causes the wheels of the engine to revolve, but I might just as truly state that for the wheels to revolve, expanding steam was a requisite. I might say that the bending of a ray of light from some distant star as it passes a particular gravitational field is caused by the curvature of space-time, but I would be equally justified in saying that the bending of the ray of light *demands* the curvature of space.

It is good as we stress the importance of teleology in relation to need and prayer, again to recall, the words of the late Morris Raphael Cohen in his great work on *Reason and Nature,* to which we have already alluded on page 88.

> If as it was contended before, scientific causality applies only to certain abstract aspects of entities, there is no reason why entities that determine each other in some way in a certain system may not be bound together in another way in another system. The presence of causal relations does not involve the teleological relation, while the assertion of the latter presupposes the former.[60]

Keeping these considerations in mind, we may well admit that life is impossible without matter and is conditioned by its laws. Mind is dependent on living tissue and is conditioned by its laws. The human spirit even in its highest phases, in pursuit of goodness, truth and beauty, is conditioned not alone by forms of biological behavior but by psychological laws on conscious and subconscious levels, which had their beginning before man had appeared upon the scene.

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[60] Cohen, op. cit., Chapter IV.

All this may be stated as true a thousand times but it will not invalidate a parallel statement. Matter exists for the sake of life and that it may meet life's need for a stable environment. Life exists for the sake of mind that the physical universe be no longer blind and bound but respond to the needs and dictates of the mind, and the creature man, matter, flesh and mind, exists that he may become the vehicle and instrument of the human spirit to which not only a world rich in quality but a world of values stands revealed.

The higher exists through the lower (efficient causation) but the lower exists for the sake of the higher because final causes are as real as physical ones. The distinction between higher and lower depends upon a scale of values. They are religious judgments, as we have already seen, which we cannot prove, but on the basis of which we appraise our own acts and that of our fellow men. The pursuit of scientific truth and objectivity and the sacrifices men have made in the course of this quest are themselves illustrative of such a judgment. It is irrelevant to say that the discoveries involved have survival value which can be clearly demonstrated, for the question cannot be evaded: What value has survival? Why should life go on when even its highest enterprises contain risk of suffering and tragedy, why not choose the blessed nirvana of nothingness?

I believe that Professor John Elof Boodin is right, as he is in so many passages where he displays philosophical and especially religious insight, when he makes the following observation:

> From the point of view of cosmic evolution, it would be truer to say that the body is evolved for the mind

> or, in the language of Plotinus, that the soul makes the body, than to say that the mind is a mere function of the body for a minded organism is the whole, the actuality which creative adaptation has striven at least in favorite instances, to accomplish.[61]

A good example of how need plays its part in making life what it is, or how the form of an organism is dependent upon function as a final cause rather than function on form, is the structure of the animal eye. If one asks the question, how is it that we see our way about or, as human beings, gaze upon the beauty of earth and sky, the natural answer is that we see because we have eyes. This statement, obvious as it seems, does not tell the whole truth or even the most fundamental truth concerning the eye. It is just as true and it is a truth having profounder connotation to say we have eyes because life needed to see. The eye is the answer of the flesh to the teleological need for further adaptation to the cosmos. If there had been no light illuminating the world, there would have been no eyes. Certain fish, I am told, living in dark caverns of the sea, have no eyes or lose their eyes. The flesh responding to the need, contrived the eye that the organism may be better adapted to survive in a luminous world. If this is true of the eye, why not of all the sense organs and members of the body? The animal life, which now exists in all its varied shapes is, form and substance, such as we know it, because the needs of life wove the tissues of life into shapes aimed at adaptation for survival to the point at which we now stand in cosmic history.

Prayer always and everywhere expresses one need which *is* congruous with the total need of all existence, and which is, therefore, necessarily and inevitably answered and assuaged—this is the need for God himself, without whom not the slightest gift we crave could find actual realization; for He alone is the creative Being present in the whole scope of the evolutionary past or future.

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61. John Elof Boodin, *Cosmic Evolution* (New York: Macmillan and Company, 1925), p. 185.

A Final Word on Prayer

Of Him we may ask what we need, provided we need what we ask. Prayer then becomes a creative communion both in its aspect of faith and resignation. The needs of the creature trigger the process through which life evolves and through which the individual and society find fulfillment. These needs must submit themselves, however, to the creative need of God which may transcend the momentary need of any individual or any species or any era. We can never be sure that any particular prayer will be answered. But of this we can be sure, that when it is answered it is because our need meets the creative need of God and merges with it. Without our need and without God as its creative source, the event for which we pray could not have happened. Prayer is the affirmation of this certitude.

One who does not believe in God will not consciously pray to God, yet God may still answer his heart's longings as though he had prayed. When we say that without God there can be no prayer, we mean it in the same sense as when we say that without God there can be no morality. Yet there are good men who do not believe in God and anguish wrings prayer from many a heart that has found no God to whom to pray. Such prayer is not impossible, it is only irrational—it is not aware of the reality logically implied by the psychology of prayer. Personally, I am convinced that many a non-believer has called for help, for deliverance, for the life of one beloved without being aware that it is illogical to cry out into emptiness. This is where his philosophy not his God falls short of his need.

One could, I suppose, write an essay on the evolution of prayer itself. As civilization progresses, prayers rise to higher levels. We find in the chronicles of prophets and saints, in the classical anthologies of prayer treasured by the great religions of mankind, not only petitions for prosperity, for victory and fertility, but more especially for the pure heart, for deliverance from temptation and, especially in the Judeo-Christian tradition, for the coming of God's

Kingdom upon earth, the rule of justice, love and peace. The need here is not for the granting of a petition but for the fulfillment of an aspiration. It becomes evident that such prayers, if uttered with sincerity, that is with full commitment and devotion to the ends envisaged, can themselves become the vehicle of their fulfillment. It depends on how many human beings join in the prayer and the commitment.

Chapter XII

WILL MAN CONTINUE TO EVOLVE?

The Dilemma of Today

Just as the arts and sciences, the institutions of the state, of industry, of education, may really be viewed as an answer to prayer, as a result of human need seeking satisfaction at the creative hand of God, and themselves setting in motion in nature and society the chain of events which make these things possible and actual, so am I convinced that the future of man, the salvation of the human race, the continuance in evolution of the human spirit, depends today on what man views as his highest need.

Never before in history has the question so clearly confronted us: What is man's final need? For what shall humanity unite in prayer? Shall we ask for further mastery of nature, for more of the power inherent in the tool and the machine and technological skills which make this possible, or shall we at last recognize that man's greatest need is mastery over himself as man, lest what he himself has wrought may put an inglorious end to the whole human enterprise.

Exploitation and Conservation

In the past we have sought mastery of the earth and its treasures through *exploitation.* Much is being written today even by sober economists on the subject of our ravaged earth and the thought is being frequently reiterated that though we once may have mastered the earth through exploitation, we cannot continue mastering it save through *conservation.*

The problem now is how can we use and yet preserve the soil which yields our wheat and corn, the residue of our forests, the fuel that still lies untouched in the bowels of the earth—coal and oil, the waters that sleep amid distant hills and for which the plains and cities are athirst.

How can we continue enjoying them in the present and yet have enough for that future which we boldly take for granted. Exploitation always required daring, imagination, skill—the virtues of the pioneer. Conservation requires another set of virtues—moderation, self-control, especially the unselfishness which can draw the wants of posterity into the circle of one's present needs. If man will not be satisfied to limit his need in the present, the future may have no existence. Unless we can conserve as well as exploit, we will be gradually losing the mastery over earth which Scripture had promised to the children of men.

Malthus

To conserve wealth for a definite static population might be a comparatively easy task. Experts in population statistics tell us that within a very short period of time, the earth's population will most probably have doubled. Thus far, thanks to war, pestilence and famine, the rate of production has outrun the needs for consumption. It may not always be so, however. Let us not deceive ourselves by thinking that because the Malthusian Law has thus far not reversed the rising standards of living in civilized countries, it has been proved erroneous. Not being an economist, it is not my purpose to give it its exact place in the social history of man. Roughly, we may say that the Law of Malthus means this—that population always presses upon the means of subsistence. That we have met its sinister challenge up to this point, is no guarantee that we shall always so meet it unless we develop a new moral strategy. The law of gravitation has not proved its invalidity because we have learned to navigate the air despite the gravitational pull which anchors us to the surface of the earth. We have learned technologically to overcome the inertia of mass. Yet gravitation and its laws and the mathematical formulae by which we measure their action cannot be ignored. We pay our tribute to them whenever we fly a balloon or a plane or a rocket, as we did long ago when first we launched our more ancient ships upon the bosom of the seven seas. We have overcome the forces which chain us to earth because we recognize the reality of these forces and have learned to counteract them.

So it may be with the Malthusian Law. Unless man will be able to extend himself to other planets and to stations in outer space, and even though he may do so, it is likely to come about that to outwit death, man may be compelled to limit life.

Regulation of population, planned parenthood, birth control, may have to be numbered among the necessary devices of civilization if this globe of ours is not to become a noisome slum. The problems are many and not easy to solve. The whole process will require a wisdom of self-control and a virtuosity of technique that we can nowhere yet perceive. Thus far, it is true that where standards of living are high and children have the opportunity to grow to maturity and perhaps to old age because the life-span has increased, the birth rate is not so terrifying as among poverty-stricken masses where indefinite increase is passionately desired, even by the practical minded because it insures at least the survival of the few. Where shall we find the balance? How shall we foster that racial self-control which will lead to the improvement of the human stock and will eliminate pestilence, war and famine as necessary instruments to preserve the fateful balance between birth and death?

Nearness and the Elimination of Distance

It sometimes gives us a warm and comfortable feeling when we assert "What a little world this is" because we are well on the way of eliminating distance. Our self-satisfaction might well be justified, were it not for the fact that thoughtful men have made the frightful discovery that *the elimination of distance creates no nearness.* Let the wheels turn with ever-increasing speed, let the propellers whirl as they will, let the planes and the missiles travel faster, men are in almost every important respect at greater distance from one another than they were even fifty years ago. All the marvelous mechanisms of mass communication —telegraph, radio and television which in almost no measurable interval in time can reach the eyes and ears of millions scattered all over our earth—have led to no greater communion of thought, to no more intimate exchanges of truth than existed a century ago.

What if we do break the sonic barrier! There are barriers more subtle and more tough between human souls, spun of greed and prejudice and hate. The leveling of these propounds a problem more difficult than that which the scientist and mathematician have solved. Would anyone say that the social climate of civilization makes it easier to convey the truth from Washington to Moscow and from Moscow to New York than was the case fifty years ago? Let the wheels turn faster and faster, let electrical vibrations of all kinds translate themselves cleverly into sound and vision—it will not help. Propaganda jams the transmitters of truth as quickly as they begin to function. Is it easier today for people on one side of the Mediterranean to speak in friendliness and assurance to people on the other side, to make them understand their real intentions and ultimate hopes, than it was fifty years ago? Is there quicker and more effective communication today between the West and a humble peasant in Central China, even if he be miraculously possessed of the marvelous monsters of mass communication, than in the days of Sun Yat Sen?

We know it takes practically no time for the inhabitants of a city to converse with one another and yet half of Berlin finds it a harder task to address the other half than was the case fifty years ago. The Arabs and Jews glare at one another in Jerusalem behind barbed wire barricades. Cuba and the United States seem suddenly to live not only in different hemispheres but in different universes of discourse.

The constant bombardment of the minds of men with calculated falsehood and malice through the use of modern methods of mass communication far exceeds an occasional word spoken in truth and mercy. Unless men and women stop gaping, like yokels at a country fair, over the fact that the sound barrier has been broken and unless they become aware of the more terrifying barriers that pile higher and higher, the future of civilization remains in the balance.

Let me make it clear that the scientists and the technologists are not at fault. Nor am I disposed to eliminate science and technology from the civilization of the future and let primitive handicrafts take the place of those marvelous and astounding devices, including Univac, which can bring blessing undreamed of to the masses of men if they are rightfully employed and if man does not permit himself to be degraded to a position lower than the tools which he has invented. I am not among those who would repudiate machines with all they make possible, even the appliances and the gadgets which the over-sophisticated, who have never been without them, now profess to scorn.

Besides, it should here be said that the scientists and technologists themselves, as I know them, many of whom are truly religious, join in the prayer that man, including themselves, may develop the wisdom to point inventive genius in the direction of human survival and salvation to further the continued development of the human spirit.

The Capsule of Doom

We have several times noted that according to certain views, the physical universe would, given enough time, die a natural death. But man was not satisfied with the slow process of the heat death. He went directly to the elementary heart of the matter, to the atom which in the days of Newton was considered the simple unit of all physical things. He split the atom and witnessed a marvelous explosion which could and did slay his enemies most effectively but which might also hasten the day when the world might become unlivable for all organic things. I am not in any way conversant with the subject, but there are among atomic scientists many who share the apprehensions to which I allude. The radiant power thus unleashed could be the agent of death not only in its immediate environment but could affect living tissue beyond the areas of its explosive force. It might possibly damage and corrupt the procreative and genetic processes in living tissue that had been unfortunate enough to escape destruction.

The peaceful uses of atomic energy are still largely a dream and will remain so as long as some of the best minds of our generation concentrate on increasing its destructiveness. The testing of hydrogen bombs had for a time been tacitly but precariously suspended because of the frightful risks involved. The search for valuable social and economic application for this marvelous energy requires that deliberation and control which makes it impossible to foresee the date when its beneficent employment could become a widespread reality.

Here, then, are our toys—guided missiles and H-bombs. Our stockpiles increase in the hope that our enemies remain sane enough never to use them and will trust us sufficiently to believe that we are not so mad as to employ them first. This is the arch dilemma of modern man. We have learned to know the infinite in the form of the infinitesimal, and we live in terror every moment of our lives. Who will take the initiative to turn the balance in favor of salvation rather than damnation and how shall we set about doing so?

It would be a pity now that space travel is no longer purely in the realm of science-fiction, and when scientists can at last assure us that we shall reach the moon, that this climactic achievement of the human spirit shall follow the infantile excesses of the juvenile imagination. In fantasy, they have already populated the planets and distant constellations with strange creatures who are our enemies. It would be a pity if all that we could do at long last would be to transfer the horrors of terrestrial warfare to the cold immensities of stellar space. It may just be possible that we might find friendship and mercy even among the stars.

An ancient prayer which I translate rather freely seems relevant at this point:

Establish peace in the skies on high
Give quietude of spirit to all who revere
Thee here below,
What in Thine eyes is good—that do.

Ultimate Need and Final Responsibility

You remember that there are some authorities who envisage for man another possible two thousand million years. Within that time, if he continues to develop, what an opportunity will be his for realizing his human potential.

The Kingdom of God from the humanist and rationalist point of view, is simply the progressive and increasing rule by the human spirit over the animal man. May God grant that we do indeed become the masters of evolution and not its slaves and dupes. The opportunity may be an act of God's grace—an answer to man's deepest need. How we shall act in the face of this opportunity is now man's high and urgent responsibility.

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